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ABSTRACT

Designed to help explain library automation to the librarian or student, this handbook presents a case to be solved, i.e., the creation of a book acquisition system for a special library; the steps to be taken to solve the problem; and a users' manual for the system to be provided to the client. The handbook is divided into three major sections: (1) analysis and design (systems development life cycle, understanding requirements, system design, software selection, hardware choices, customization for local options, interpreted code versus compiled code, and suggested readings); (2) book acquisition system users' manual (getting started, authority files, book acquisitions, reports and forms, online searching, and system utilities); and (3) suggestions for further investigation (additional exercises are included here to present further experience in system design). Eight suggested readings focus on dBase programming, the language the acquisition system is written in, and information is provided for ordering the dBase programs in hard copy with an accompanying magnetic disk of the source code. (CGD)

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Understanding Library Microcomputer Systems

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by Roger C. Palmer

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PROFESSIONAL SKILLS SERIES

**UNDERSTANDING
LIBRARY
MICROCOMPUTER
SYSTEMS**

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PACIFIC INFORMATION INC.
Studio City, CA 91604
1988

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HOW TO USE THIS BOOK

Many of us who have spent some years in the classroom have found the case study to be an effective vehicle for teaching intricate problem-solving in complex technical areas. This book is a variation of the case study approach.

- o It presents a case to be solved; create a book acquisition system for a special library having a staff of three and a limited automation budget.
- o Unlike the case study, the steps taken to solve the problem are provided in the analysis and design section.
- o Also unusual is the inclusion of the *User Manual* for the system provided to the client and a magnetic disk which contains the complete software needed to operate the system.

The intent is to help explain automation by having the librarian or student experience the process of creating a system. Many may find the following steps most beneficial in exploiting the materials supplied:

1. Read the "Getting Started" section (page 41).
2. Follow the directions and set-up your computer with the **Book Acquisition System**.

3. Turn to Exercise 1 (page 113) and gather the materials needed to begin using the system.

4. Enter the data collected for Exercise 1 by using the system as outlined in Chapters 1 to 5 of the *User Manual* (pages 63 to 109).

5. Read the "Analysis and Design" section (pages 1 to 38).

6. Do as many of the remaining exercises (pages 115ff.) as you wish.

I would like to thank my colleague, Céline Alvey, and her students for using an early version of the software and user manual for the lab exercises in the Information Retrieval Systems Analysis and Design course taught at UCLA. My thanks also to the two special librarians who cooperated in the development and testing of the system.

Roger C. Palmer

ANALYSIS AND DESIGN

The term *library automation* refers to a wide-range of activities that are or can be converted from manual to automated operations. Automated authority control ensures unified and comprehensive access to the store of records. Automated acquisitions obtains the bibliographic product from a vendor or donor. Automated cataloging follows standard rules for description to ensure accurate data about the bibliographic item. Other automated activities provide efficient exchange of interlibrary loan data, enhance access to reference information, and provide the ability to produce a variety of bibliographic products to help clienteles identify needed materials. Listed below are some of the areas typically included in discussions of library automation.

Authority Control

- Online local authorities
- Online author/name authorities
- Online subject authorities
- Online series authorities
- Online validations

Acquisitions

- Order origination
- Online transmission from/to library/vendor
- Claims

Cataloging

- MARC format supported
- Online local bibliographic data
- Online local non-bibliographic data
- Online error reporting

Output

- Purchase order slips
- Catalog cards
- Label sets
- Accession lists
- Bibliographies, printed/COM catalogs

Searching

- Author/name
- Title
- Series
- Subject
- Keyword
- Truncation
- Boolean

Serials

- Check-in
- Claims

Circulation**Interlibrary Loan**

- Union holdings
- Data communications
- Link to catalog data

SYSTEMS DEVELOPMENT LIFECYCLE

Creating computer-based library systems involves a number of steps in the *systems development lifecycle*.

Systems Planning

- Needs Analysis
- Feasibility Study

Systems Requirements

- Analysis of User Requirements
- Technical Environment
- Conceptual Design
- Review of Off-the-Shelf Software
- Alternatives Evaluation

Systems Development

- Technical Specifications
- Prototype of System
- Programming
- Testing
- User Training
- Implementation and Conversion Planning
- Systems Test

Implementation

- Conversion
- Training
- Post System Review

Maintenance

- Correct problems not discovered in testing (bugs)
- Add new features

The *feasibility study* identifies the focus of the automation project. Once a project is identified, the next step is to bring together the necessary

human resources to provide a project definition. This involves a thorough needs analysis which leads to an understanding of the project scope. The definition should be explicit enough to provide a basis for estimating the human and financial impact on the organization by the project, scheduling for completion, and gross cost estimates. Approvals by top management will be based on the project definition and must be obtained prior to project start. The library must identify a staff member to be Project Manager (PM). The PM represents the interests of the library and oversees project development. The PM reports to library management and coordinates resources needed for project completion. Often library automation is effected by individuals or groups external to the library. In these cases, it is especially important that a PM be appointed by the library. The PM oversees data collection for the present system (manual or automated). User needs for a new system are identified and analyzed. Management and staff agree on the goals and objectives of the project. The benefits of the new system are quantified as much as possible. Implications for staffing (including the need for new technical positions) are delineated. The constraints, scope, timing, and costs of the project are detailed in the final planning document produced in this phase.

For particularly complex automation projects the library may wish to contract a consultant to help in the evaluation of automation alternatives. A systems analyst is a professional intermediary who acts as the representative of the user group to the agency or organization that will design and implement an automated system. *Systems analysis* is a process of refining the requirements from the feasibility study into formal specifications that can be used by system designers and computer programmers. The systems analyst conducts an iterative process of reviews and specification revisions to reach a point when a presentation of alternatives can be made. It is possible that the alternatives may not include an automated system. The non-recurring systems development costs, the ongoing operational costs, and timetables for alternatives are covered. This may result in the issuance of an RFP (Request for Proposal) outlining the requirements for the desired system.

Systems design proceeds from the specifications prepared by the analyst. The designers concentrate on three major areas to design the system. First are the specifications for output requirements such as forms or reports. Second is the review of the detailed analysis of source data for input requirements that will be collected on computer terminals or from other input devices such as light pens or card readers. Third is a detailed analysis of the processing required to convert the source input data into the required output for forms or reports.

Systems implementation and evaluation requires that both the new system and its predecessor be operated simultaneously until the new system is thoroughly tested and has been accepted by the library. This is a difficult period for the all concerned. Many systems fail at this point if the analysis has been deficient and has led to an inadequate design. Failure may be caused by poor programming that meets the specifications but imposes difficult data entry procedures on users or absorbs too much processing time to handle transactions or reporting in a timely fashion. Hardware that is too noisy or inappropriately designed for data input or output may cause the system to be rejected. An implementation schedule that does not take into account other pressures on the staff may doom the system to rejection. Insufficient training of users often causes negative assessments and ultimate system rejection.

For smaller systems, some of the steps may be collapsed together or completed informally. For large systems, each step will be carefully documented and involve the time of many individuals throughout the library. Successful library automation requires long-term planning. Library management must be aware of the needs and directions of the library, the parent organization, and the library clientele over a multi-year period. This understanding will guide management in identifying one or more projects that are appropriate in support of its mission and goals.

This book presents the results of the above process with regard to the design of a **Book Acquisition System** for a special library. There were several goals.

Increase efficiency by reducing the redundant typing of data on purchase orders, temporary catalog slips, and various lists.

Improve service by providing timely reports to users on the status of outstanding orders and donations.

Support management through extensive tracking and reporting on encumbered and expended funds.

Limit the need to expand staffing by automating several repetitive manual routines.

UNDERSTANDING REQUIREMENTS

The system must meet the needs of a special art reference library having a professional staff of two (the library administrator and a cataloger) and a clerical support staff of one. The library issues approximately 600 purchase orders per year and acquires about 1000 books as a result. Once a book is received, the cataloger identifies the appropriate Library of Congress cataloging for the item and either an LC card set is ordered or the book is cataloged using RLIN (Research Libraries Information Network).

This system is to provide automated solutions from the time that the decision is made to acquire a book until the time that it is received.

The roles of analyst, system designer, and programmer are performed by one person. Thus, some steps in the development process were combined.

January 1986

Librarian proposes to the administration the acquisition of a microcomputer and database software to handle book acquisitions.

February 1986

Librarian obtains bids from two vendors for IBM Personal computer configurations.

May 1986

Librarian meets with consultant analyst. Based on the limited resources of the library for automation and based on the existing installed base of equipment, the decision is made to acquire an IBM Personal Computer environment. The actual go-ahead for purchase is held pending the outcome of systems analysis of the needs

for a book acquisition system. The librarian is instructed to gather samples of all forms to be automated and assemble copies of all purchase orders issued over the previous twelve months. Consultant agrees to provide initial analysis without charge.

July 1986

Consultant meets with librarian to review all forms, discuss requirements, and assemble data on the use of forms. The librarian is given a series of assignments based on a discussion of requirements which involve additional data collection related to forms use and catalog requirements for the Temporary Card Catalog Slips.

August 1986

Site preparation includes design of a computer workstation with space for a computer, monitor, keyboard, the printer within a sound baffle, overhead shelving for books, a new telephone line for voice and provision for an extra line for the future installation of a MODEM, electrical wiring, and lighting.

Analysis of collected data for previous year -

Purchase orders generated:	606
Number of vendors used:	357
Number of donors:	11

Books purchased:	1078
Books donated:	11

Types of vendors:

Used book dealers:	98
Galleries/museums:	66
Publishers:	65
University presses:	59
Small presses:	42

Types of vendors, continued

Associations:	10
Historical societies:	7
Government agencies:	6
Libraries:	4

Vendor countries:

United States	270
United Kingdom	69
Ireland	13
France	2
West Germany	2
Canada	1

Number of vendors receiving
only one order: 243

Number of vendors receiving
more than one order: 114

Maximum number of orders sent
to one vendor: 11

Maximum number of book titles
on one purchase order: 6

3 x 5 Catalog Slip

The library wants to use the computer to produce the temporary card catalog slip which is a seven-part set of 3 x 5 forms used to track a book order. The first part is inserted under main entry into the card catalog until a book is received. The form is divided into four sections.

The upper left section is used to display the name of the originating branch library.

The left column under the branch identification is used for various tracking data such as the initials of the searcher, order date, fund codes, and so on.

The upper right has space for a three-line main entry and a Library of Congress card number.

The lower right section provides space for a two-line title, and single lines for imprint, identification, and price data.

Analysis revealed that only four parts of the slip are actually used, the remaining three are routinely discarded. Using elite type, the slip has a maximum capacity of 17 lines at 60 characters each (1,020 characters total). However, the actual space available for data is far less since the library expects white space to separate elements and requires the use of field labels for the data entered on the slip. Although the library does not use this form as an order slip, it could be used for that purpose by stamping the library name and return address in the lower right section of the form. *It is the analysis of this form that is most important for defining field length limitations for the system. The form layout has been mandated by the parent library and the amount of space available for the main entry, title and other data are limited both by the size of the form and the required layout of data on the form.*

	* LC			
a/c				
Searched				
Ack'd				
Ord'd				
No.	Pl.	Pubr.	Date	
OI	Ed.	Vols.		
	Cat.	Item	Rec'd by	O.K.
Date	Ref.	Quote	Price	
Rec'd				
Ledger				

Purchase Order Form

The library wants to automate production of its purchase order form. The pre-printed form is divided into four sections.

The upper left provides the library name, address and telephone number. A multi-line space is provided for the vendor name and address which is to show through a window envelope.

The upper right contains a pre-printed prefix for the branch library (ARL for Art Reference Library) and a pre-printed sequence number. Instructions to the vendor are included in this section.

The body of the form consists of three columns. The left column is used to list quantity, the central columns lists identifying bibliographic data for the book to be acquired, and the last column is used to display the purchase price.

The bottom of the form includes space for an authorization signature for the purchase.

[preprinted return address]		<i>Kindly Observe Instructions:</i> 1. GIVE ORDER NUMBER ON ALL INVOICES AND PACKAGES. 2. REPORT PROMPTLY ON ALL "SOLD" ITEMS OR SPECIFY REASON FOR DELAY IN SUPPLYING ANY ITEM ORDERED.
To		
QUANTITY	Please enter our order for the following, subject to conditions on the face and reverse of this order:	
KINDLY SUPPLY INVOICE IN DUPLICATE		THANK YOU!
SPECIAL INSTRUCTIONS: Please specify number of parcels in shipment on invoice and label.		Curator of Art Collections
By _____		

Library Output Requirements

The librarian creates the acquisition number based on the fiscal year of the acquisition and an ascending sequence number. This number is to be the key to access all information about an acquisition and is to be printed by the computer on all forms.

The 3 x 5 catalog slips are in blank four-part form-feed. The computer prints all required field labels. Section lines used on the forms prepared by typists are unnecessary since their purpose is to help typists align data.

The 3 x 5 slip is modified to print up to three lines of main entry data. The worst case main entry was discovered to be 79 characters long. The main entry field was declared at 80 characters. Word wrap facilities are required to fit the result on the form at fixed positions.

The title is compromised at 65 characters, sufficient to identify a book on a 3 x 5 slip or purchase order form. Title space is limited to two lines. The first line is indented two characters. Word wrap facilities are required.

The space on the pre-printed form is too limited for place, publisher, and date in columnar format. Word wrap for these columns seriously limits the amount of information that can be entered. Place, publisher and date are stacked on successive lines to accommodate more data, this change was approved by main library administration which also suggested moving the Library of Congress card catalog set number to the area next to imprint date.

The library carefully reviewed all data elements to be included on 3 x 5 forms and on purchase orders. Several unused fields were eliminated.

Up to nine (9) book titles are accommodated on the automated purchase order form. This is done without expanding to a continuation form and provides a 50% increase over the maximum number of items previously appearing on one form.

SYSTEM DESIGN

Authorities

Authority files for vendor and donor names and addresses permit the librarian to key this information once and maintain it in only one location. When preparing an acquisition, the system prompts only for the vendor or donor code. When forms or reports are generated, the system performs a "look-up" in the vendor/donor file and prints the address data in an appropriate format.

Authority files also are used to control fund codes. On data entry, an acquisition may be charged against one or two fund codes from the approved list. This ensures that accounting data is accurately maintained. The librarian can use the fund authority system to flag a code as inactive. This will prevent new orders from being charged against that fund but does not hinder editing of older orders using a flagged fund.

Ordering

The system handles several types of orders:

- Pay later by invoice
- Prepaid
- Gift
- Transfer

It is not programmed to track standing orders or continuations although specific items ordered or received as a result of a standing order or continuation can be entered on an as-needed basis. The user may include up to nine (9) books on an individual purchase order. There are several status codes that can be assigned to each book:

- Out-of-print
- Backordered
- Lost but paid from fund
- Received
- Canceled

Reporting

The system produces several printed outputs. Two forms are generated:

Form-feed 3 x 5 catalog slips

Form-feed purchase order forms

Several reports are available. For the library clientele:

Book arrivals list

Books donated list

For library management:

Donor list

Fund code list

Accounting problem list

Fund accounting report

For library staff:

Vendor/donor code lists

Proof reports for vendors/donors

Book lists selected by status code

Searching

BAS supports a modest online search capability for library staff. Unlike large systems such as DIALOG or BRS which create keyword indexes to all significant portions of a bibliographic record, the BAS search facility is limited to matching up to the first fifteen characters of a title, the main entry, and the two added authors that may be associated with an entry. To save disk space, the online search mode scans the entire book file, called ITEM.DBF, without the use of indexes. On an IBM PC/XT, a search takes approximately one (1) minute per 1,000 books. On an AT, the search times are halved. Abbreviated authors and titles are displayed for qualifying records. The librarian also may view full bibliographic records for each book in the qualifying set.

Utilities

BAS supports a number of utilities to maintain the integrity of the database files and make it easy for the user to change the BAS operating procedures. For example, one utility allows the user to select the type of printer for output (Epson compatible or IBM Proprinter compatible), set sales tax rates, and identify the disk drive on which database files/indexes will reside. Other utilities backup to and restore from floppy disks, and purge data or restore data by fiscal year.

The last capability is of special interest. All data stored in BAS is intended to be of temporary value. Once a book is received, the catalog data in BAS is replaced by permanent cataloging from LC or a bibliographic utility. After all purchases for a fiscal year are closed and the final fund accounting reports are run, the data for that fiscal year is no longer of use online. One of the provided utilities permits the librarian to purge data for a fiscal year. This is especially useful for a system that will not have an expanding hardware environment to support growing files. However, should the librarian decide to restore data for a previously purged fiscal year, another utility has been provided for this purpose.

Database Files

The six database files used to store data for the **Book Acquisition System** were designed based on the analysis of output forms (the Purchase Order form and the 3 x 5 temporary card catalog slip), on the needs of the library management and staff for management reports, and on the needs of the clientele for information about new acquisitions.

MANAGE.DBF

The **MANAGE.DBF** stores look-up data for three user-selectable system parameters. The user can set the local sales tax rate which will automatically be computed for all orders. The user can select output for two types of printers IBM Proprinter compatible and Epson compatible. The user can stipulate the disk drive on which the data files will be found, drives A or B or C. In addition, the system automatically tracks the backup disk set to be used. This data is stored in the **MANAGE.DBF** and the **BAS** does a look-up of current values in this file prior to displaying the main menu screen to the user. There is not an index associated with this database file.

Structure for database: manage.dbf
Number of data records: 4
Size of each record: 8

Field	Field Name	Type	Width	Dec	Description
1	MA_CODE	Character	1		One character code S = sales tax rate P = printer B = backup sequence D = drive for data
2	MA_VALUE	Numeric	6	4	Data value for one of above
** Total **			8		

FUND.DBF

The FUND.DBF contains authority records for authorized fund accounts. It has an associated index, FI_FUND.NDX.

Structure for database: fund.dbf

Number of data records: 3

Size of each record: 39

Field	Field Name	Type	Width	Description
1	FA_FUND	Character	3	Three-digit numeric fund code
2	FA_DESC	Character	35	Fund name/description
** Total **			39	

STATES.DBF

The STATES.DBF was created as a help file for listing postal service two-character codes for the United States and Canada. It has an associated index, SI_CODE.NDX. Facilities for user changes to this file are not provided in BAS since these codes are static.

Structure for database: states.dbf

Number of data records: 62

Size of each record: 30

Field	Field Name	Type	Width	Description
1	SA_CODE	Character	2	State/Province abbreviation
2	SA_STAT	Character	27	Full state/province name
** Total **			30	

VENDOR.DBF

The VENDOR.DBF contains vendor and donor authority records. It has an associated index, VI_VEND.NDX.

Structure for database: vendor.dbf

Number of data records: 1

Size of each record: 294

Field	Field Name	Type	Width	Description
1	VA_VEND	Character	6	Vendor/donor code
2	VA_NAME	Character	35	Vendor/donor name
3	VA_ADD1	Character	35	Address
4	VA_ADD2	Character	35	Address
5	VA_ADD3	Character	35	Address
6	VA_CITY	Character	25	City
7	VA_PROV	Character	2	State/Province Links to SA_CODE in STATES.DBF.
8	VA_ZIPC	Character	15	US/foreign postal code
9	VA_COUN	Character	15	Country
10	VA_PHON	Character	15	Telephone number
11	VA_DISC	Character	30	Discount
12	VA_ACCT	Character	15	Account number
13	VA_NOTE	Character	30	Note
** Total **			294	

PURCHASE.DBF

The PURCHASE.DBF contains one record for each purchase order number created. Vendor or donor codes, fund codes, and financial data about an acquisition are stored here. It has an associated index file, PI_NUMB.NDX.

Structure for database: purchase.dbf
Number of data records: 0
Size of each record: 122

Field	Field Name	Type	Width	Dec	Description
1	PA_NUMB	Character	6		Acquisition number First two digits represent fiscal year in which order originated followed by four- digit sequence number starting with 0001 and extending through 9999, links to IA_NUMB in ITEM.DBF
2	PA_ORDE	Date	8		Date of order
3	PA_VEND	Character	6		Vendor/donor code Links to VA_VEND in VENDOR.DBF
4	PA_FISC	Numeric	2		Fiscal year
5	PA_TOTL	Numeric	8	2	Order total (\$) Total dollar value of order excluding taxes, shipping and fees
6	PA_SALE	Numeric	6	2	Sales tax (\$)
7	PA_SHIP	Numeric	6	2	Shipping costs (\$)

8	PA_FEES	Numeric	6	2	Fees (\$)
9	PA_FUN1	Character	3		Fund code First fund to be charged, links to FA_FUND in FUND.DBF.
10	PA_EXP1	Numeric	9	2	Spent (\$) Expenditure charged against first fund in dollars
11	PA_ENC1	Numeric	9	2	Encumber (\$) Encumbered amount charged against first fund in dollars
12	PA_FUN2	Character	3		Fund code Second fund to be charged, links to FA_FUND in FUND.DBF.
13	PA_EXP2	Numeric	9	2	Spent (\$) Expenditure charged against second fund in dollars
14	PA_ENC2	Numeric	9	2	Encumber (\$) Encumbered amount charged against second fund in dollars
15	PA_INVO	Character	30		Invoice number(s)
16	PA_STAT	Character	1		Status of order X = completed I = incomplete
** Total **			122		

ITEM.DBF

The ITEM.DBF contains book data about each book ordered on a purchase order. Up to nine item records may be associated with one purchase order.

Structure for database: item.dbf
Number of data records: 0
Size of each record: 452

Field	Field Name	Type	Width	Dec	Description
1	IA_NUMB	Character	6		Acquisition number Six digit purchase order number, links to PA_NUMB in PURCHASE.DBF.
2	IA_ITEM	Character	7		Item number Seven digit unique item number composed of purchase order number plus a sequence number from 1 to 9
3	IA_MAIN	Character	80		Main entry personal name is keyed in inverse order
4	IA_AUT2	Character	50		Second author keyed in inverse order
5	IA_AUT3	Character	50		Third author keyed in inverse order
6	IA_TITL	Character	65		Title
7	IA_LIBC	Character	10		Library of Congress card catalog set number

8	IA_CALL	Character	15	ISBN or item number
9	IA_PLAC	Character	25	Place of publication
10	IA_PUBL	Character	30	Publisher
11	IA_DATE	Character	7	Date of publication
12	IA_EDIT	Character	15	Edition
13	IA_REQU	Character	3	Requested by
14	IA_OKBY	Character	3	OK by
15	IA_NOTE	Character	50	Note
16	IA_SEAR	Character	3	Searcher
17	IA_QUAN	Numeric	1	Quantity
18	IA_FPRI	Character	15	Foreign price - display
19	IA_APRI	Numeric	7 2	Price (\$) Total price in dollars
20	IA_RECD	Date	8	Date received
21	IA_STAT	Character	1	Status of book 0 = out-of-print 1 = backorder 2 = pay later 3 = prepay 4 = lost but paid for 5 = received 6 = gift 7 = transfer 8 = canceled

** Total **

452

Database Design

Many librarians are familiar with file management systems. These allow a user to create a file structure for storing information. All information is stored in a single file and all transactions are posted to that file. Several indexes may be associated with the file based on various fields in which data are recorded. Printed reports are easy to generate since all data are in one place. Many librarians find it easy to create single file databases for special applications and generate various reports using the built-in report writers supplied with file management software.

However, this approach has many deficiencies for an application such as the **Book Acquisition System**. It does not support separate authority files. The report writers are not sophisticated enough to generate special forms like 3 x 5 catalog slips employing multiple type fonts. Most important is the redundancy of data storage.

A single flat file approach to the data for a purchase order would include:

207 fields

(the 12 fields in a VENDOR.DBF record [excluding VA_VEND which would not be needed], 15 fields in the PURCHASE.DBF [PA_VEND would not be needed] plus the 20 fields [IA_NUMB would not be needed] from the ITEM.DBF times the 9 items that are to be accommodated on a purchase order)

4414 CPR

(characters per record, includes 287 characters for the vendor/donor data from the VENDOR.DBF [excludes VA_VEND and dBASE delete flag], 122 characters for purchase order data from the PURCHASE.DBF plus 445 characters [excludes 6 characters for IA_NUMB and 1 character for the dBASE delete flag] times 9 items per order)

The design called for in the proposed **Book Acquisition System** uses relational approaches to data storage but deliberately avoids full normalization.

Normalization is a process whereby all repeating groups are identified and extracted into unique relations, called database files in dBASE. Within the overall database structure relationships are reduced to their lowest common denominators. This process is only partially carried out in the **Book Acquisition System** design.

The **MANAGE.DBF** maintains user-selected parameters for use by the program files which lookup data for the sales tax rate, printer selected, last backup disk set used, and location of data files and proceed accordingly with program instructions.

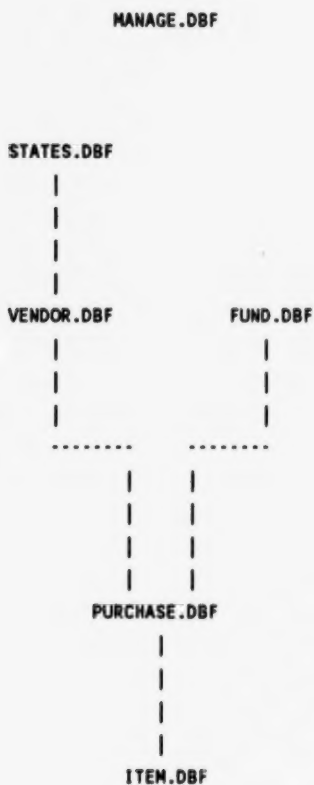
The **STATES.DBF** is a lookup file for the **VENDOR.DBF**. It contains the approved two-character codes for states and provinces. The data entry operator can elect to display approved codes while adding or editing vendor or donor authority records.

The **VENDOR.DBF** and **FUND.DBF** are authority files containing names and addresses of vendors/donors and approved fund codes against which to charge acquisitions.

The **PURCHASE.DBF** has as its key a unique six-digit number, the first two represent the fiscal year of the acquisition and the remaining four are sequence numbers ranging from 0001 to 9999 (this number provides the link to the **ITEM.DBF**). **PURCHASE.DBF** contains the financial data for an acquisition, the vendor or donor code to which the acquisition is to be posted (which links to the **VENDOR.DBF**) and the three digit fund code to which the acquisition is to be charged (this links to the **FUND.DBF**).

The **ITEM.DBF** contains the book descriptions for each book acquired. Up to nine book descriptions may be linked to a **PURCHASE.DBF** record by means of the acquisition number.

Relational Approach



The relational approach used in the above design places the data unique to the purchase order as a whole in the PURCHASE.DBF and the data unique to the description of a book in the ITEM.DBF. The acquisition order number from the PURCHASE.DBF is a key into the ITEM.DBF where PA_NUMB is equal to IA_NUMB. An ITEM.DBF record is generated only if it is to be associated with a purchase order. Only six characters are reserved in the PURCHASE.DBF to link the PA_VEND code for a donor/vendor to its full authority record in VENDOR.DBF.

A purchase order for one book will absorb the following disk storage:

122 characters for the PURCHASE.DBF record

452 characters for the ITEM.DBF record

574 characters total (plus some index overhead)

This compares to 4414 characters of storage for the same purchase order in a file management system which stores data in fixed length fields.

The ITEM.DBF retains repeating elements for main entry/author data. An earlier system design isolated the main entry/author data into a separate relation (database file). This procedure imposed more programming overhead for data maintenance and program design than benefit in system performance. A subsequent release eliminated the relation and absorbed the repeating fields back into the ITEM.DBF.

Some might argue that separate fields for IA_CALL (which stores the ISBN), IA_PLAC (for place of publication) and IA_PUBL (for publisher) are redundant and should be normalized. In this approach the user would key an ISBN and the computer would lookup place and publisher from a publisher file. Maintenance of separate publisher files would create more work than could be saved in keying. The special library for which this system is designed orders primarily out-of-print books from dealers. Generally the ISBN is either not known or was never assigned.

Lack of normalization also is evident in the PURCHASE.DBF where two fund allocations are tracked within the PURCHASE.DBF rather than separating them into a relation (database file). Again, this was done for ease of programming based on research which showed that divided fund assignments are made in less than 3% of purchase orders and are never made to more than two funds.

The relational approach to the system design is effective in providing authority control over significant data. The VENDOR.DBF provides a central place to store complete vendor or donor name and address data. This makes it easy for the library to maintain current information about a vendor, its discount policies, telephone number and special notes. In addition to ease of data maintenance, the user can link a vendor or donor record to a specific acquisition with a four to six character code thus reducing the number of keystrokes required to prepare an

acquisition. Some might argue for full normalization by relating zipcodes to cities and states. Again, maintenance of a twenty-thousand city file associating zipcodes with appropriate cities and states would impose a greater overhead than benefit for the fewer than five-hundred donor/vendor records to be input into the system.

The FUND.DBF and the STATES.DBF provide authority control over the fund codes and state abbreviations for purchase and vendor/donor data. These look-up files are an easy way to ensure consistent application of codes to records prepared.

SOFTWARE SELECTION

It is estimated that the system absorbs the following fixed disk space during the first year (includes associated indexes):

System overhead	320,000 characters
400 vendor authority records	120,000 characters
600 purchase order records	85,000 characters
1000 book item records	500,000 characters
Subtotal	1,025,000 characters

Assuming similar acquisition rates for the second and third years (without the addition of more donor/vendor records):

1200 purchase order records	170,000 characters
2000 book records	1,000,000 characters
Subtotal	1,170,000 characters
Three (3) year total	2,195,000 characters

Fixed disk storage is measured in megabytes (MB) where 1MB is equal to 1,000,000 characters. The **BAS** system will absorb slightly more than 10% of fixed disk space on a 20MB system over a three-year period. This allows room for other automated activities such as spreadsheets or word processing. The fact that old data may be purged and stored offline allows the system to remain functional indefinitely.

Software Alternatives

Purchase an off-the-shelf book acquisition system software application that is complete and self-contained.

Purchase dBASE III+ and an off-the-shelf set of programs that run under dBASE III+ to do book acquisitions.

Have a custom application written to do book acquisitions to the specifications of the library.

The last is the most expensive but was the one chosen for reasons that will be explained later.

Software of Choice

The software of choice is dBASE III+. The selection is based on several factors.

The BAS is intended to retain data on a temporary basis. The estimates above reveal that the data will not outgrow the physical environment.

Note: dBASE III+ and dBASE IV use fixed length data storage. Thus no matter how many or how few fields are used to describe a book, since a record in the ITEM.DBF requires 452 characters, each ITEM record will use 452 characters of disk storage plus index storage for its acquisition order number. dBASE might not be a favorable choice for a growing database, such as serials holdings. The foregoing analysis reveals that it is an acceptable choice for this limited application.

dBASE has the largest installed base of relational Data Base Management System (DBMS) software for microcomputers. This has several advantages for the library. Ashton-Tate, producers of dBASE III+, have a policy of providing an upward migration path for software programmed with their products. Thus, as new dBASE products become available, the library can take advantage of improvements made in execution of dBASE programs by moving into new versions of the DBMS software. Also, because so many copies of dBASE have been sold, the library may seek enhancements to its system by selecting from among the many dBASE programmers available locally.

Many add-on products are available which interface to the dBASE DBMS. Sophisticated search systems and report writers are available which can be used in conjunction with the dBASE database files that are the basis for the **Book Acquisition System**.

HARDWARE CHOICES

The library required that the **BAS** run on hardware that was in general use within the organization. They acquired bids for the following hardware and software:

IBM PC-XT with 20MB fixed disk and 640K memory (RAM)

The IBM PC-XT is a microcomputer. It contains the slowest microprocessor in the IBM PC line but is a capable machine for single user applications involving limited data processing activities. A 20MB fixed disk is a place to store on the computer 20 million characters of programs and data so that they may be easily accessed. The 640K of RAM is 655,360 characters of random access memory. RAM is the place where the computer brings programs and data for which processing is to be done by the microprocessor. The **BAS** software and data are stored on the fixed disk. When the **BAS** is activated, the program is transferred to RAM for the librarian to use. As the librarian creates, stores, and retrieves data, transfers are made between fixed disk online storage and RAM where programmed instructions process the data.

360K disk drive

The 360K disk is a floppy disk drive capable of holding 368,640 characters of data. It is needed to load purchased software and copy programs or data on the fixed disk for backup or transfer to another computer.

Irwin internal 10MB tape backup

Although data and programs can be backed-up (saved offline in case of system failure) to the floppy drive, a tape backup system works much faster.

Parallel printer card

Attaching a printer to the computer requires a special parallel printer circuit board be inserted into the computer.

Serial adapter

Use of a MODEM (a communications device that allows the computer to attach to a telephone line for the purpose of communicating with another computer) requires a serial circuit board be inserted into the computer.

Enhanced graphics adapter

Attachment of a display device (monitor) to the computer requires a display circuit board be inserted into the computer.

Amdek 310A amber monitor

The monitor displays the results of interacting with the computer.

IBM Proprinter

A dot matrix printer prints forms and reports.

Surge Protector

Protects the computer from electrical power surges.

Cables

Cables are required to attach the monitor, printer, and MODEM to the computer.

PC-DOS 3.2

The DISK OPERATING SYSTEM software organizes the PC's internal communications processes with devices such as the monitor, printer, and disk drives.

The library made these selections because their parent organization does not have the financial resources to employ technical staff to support computer operations. By adopting the IBM Personal Computer, they are taking advantage of the hardware expertise gained by staff in other automation projects within the parent organization. The other software in use on PC's is for word processing and LOTUS 1-2-3, a software program used in financial analysis.

The total amount of money available for the project was five-thousand dollars. The money was spent on hardware and dBASE III+ software.

Note about this hardware/software environment:

The programs will work faster and more efficiently on an IBM PC/AT than on the IBM PC or PC/XT.

They will run faster and more efficiently on an IBM Personal System/2 model 80 than on an IBM PC/AT.

In the future, the library can improve the operating environment by upgrading to more powerful equipment and/or by purchasing larger fixed disk storage and/or by upgrading from dBASE III+ to dBASE IV.

CUSTOMIZATION FOR LOCAL OPTIONS

In allocating five-thousand dollars for this project, the library had set-aside sufficient funds for acquisition of the computer hardware (IBM PC-XT, printer, etc.) and system software (DOS 3.2) and DBMS software (dBASE III+). However, this approach requires either a customized application be created for the library using dBASE III+ or the library buy book acquisition system application software that will run under dBASE III+ (since they already own dBASE III+). But, the five-thousand dollar budget is not sufficient for either creating a customized system running under dBASE III+ (which might cost as much as ten-thousand dollars) or for buying an off-the shelf acquisition system (which might cost as much as four-thousand dollars plus charges for customization, installation, training, and maintenance).

The library had correctly identified its need for automating operations and had selected reasonable hardware and software environments for the automation. However, sufficient funds were not available to acquire off-the-shelf book acquisition software and pay for the modifications required to meet library needs.

The consultant offered to do the analysis, design and implementation of a book acquisition system in dBASE III+ to meet the library's requirements in exchange for permission to publish the results of the process to the library community and release the resulting software for use in other libraries.

What must be understood is that all of the hardware and software acquired by the library at this point (computer, printer, disk operating system [DOS] software, and dBASE III+) still does not make a book acquisition system. To do that, a programmer must translate the system design into a series of dBASE programs that will become a **Book Acquisition System** application running on an IBM personal computer.

November 1986

Consultant and librarian meet to discuss proposed data entry system. Hardware, systems software, and dBASE III+ are acquired and installed. Librarian purchases DOS training programs to learn about computer operations on the IBM PC. Consultant agrees to provide system without charge in exchange for permission to use the development experience as the basis for a textbook. A letter of agreement to this effect is issued by library management.

January 1987

Release 1 of the **Book Acquisition System** is issued to the library. It consists of six database files and nine programs. It provides facilities to:

- Create an Acquisition
- Edit an Acquisition
- Delete an Acquisition

- Add or Edit Vendor Records
- Add or Edit Fund Codes

The library agrees to use the system to retrospectively enter one-hundred purchase orders issued during fiscal year (FY) 86.

March 1987

Release 2 of the **BAS** revises field lengths based on the experience of entering real data. Improved and expanded data entry screen layouts are released. The first *User Manual* is issued. The number of programs increases from nine to nineteen.

Because of prior commitments, the consultant asks the library to complete data entry for FY86 purchase orders during the period from March 23 through the end of September. This major data entry project (600 purchase orders for 1000 books) tests the system and highlights deficiencies. Extensive logs are maintained about problems encountered. Suggestions for change are collected in the logs and in the *User Manual*. The consultant reviews the user evaluation of the system in September 1987.

October 1987

Release 3 of the software is issued. New features include delete vendors/donors, delete fund records, delete books, delete financial data, pack/build the database files/indexes, and backup data to drive A. The edit process is changed to allow the user to select from a number of edit processes rather than being forced through all edit activities. Screens are made more user friendly by the inclusion of several programmed edit checks. Background processing of financial data is introduced (the computer computes totals, sales taxes, etc.).

November 1987

Release 4 provides printed reports for the first time. Because of the complexity of programming the reports these had been held until the library completed testing all data entry fields, field formats, and field lengths. The number of programs increases from nineteen to twenty-three.

December 1987

In Release 5 four additional reports are provided along with programs to produce the 3 x 5 printed slips and purchase order forms. Utilities are added for changing sales tax rates, selecting printers, restoring files from drive A, and purge/restore data by fiscal year. The number of programs increases from twenty-three to thirty-four.

January 1988

Release 6 adds an online search capability by author and title. This is the final release to the library. The number of programs increases from thirty-four to thirty-five. A final *User Manual* is issued. The *User Manual* and software are used as the basis for a series of lab assignments in a graduate library school course on Information Retrieval Systems Analysis and Design. Student suggestions are incorporated into revisions of programs and documentation.

April 1988

Release 7 is designed for distribution to other libraries. It includes the ability to add another book to an existing purchase order while in the edit mode. A utility is added to permit the user to specify data files on drives other than the fixed disk (primarily for the use of library schools which may wish to let each student carry his/her own data on separate floppy disks). The number of programs remains at thirty-five.

INTERPRETED CODE VS. COMPILED CODE

The version of the **Book Acquisition System** released to the library consists of:

1. A copy of dBASE III+ purchased by the library.
2. Thirty-five programs files (PRG) in the dBASE programming language.
3. Six report form files (FRM), six of the reports generated by the system were built using the dBASE report generator.
4. Six database files (DBF) for storing the data collected.
5. Five index files (NDX) for storing key field data associated with the database files.

There are advantages and disadvantages to the use of dBASE. The chief disadvantage is that dBASE interprets programs. This means they are converted into the machine language that the computer understands on a line-by-line basis as the lines are encountered during a session with the user. Interpreted programs are slower than compiled programs when executing. On the positive side, the library has the full use of the **Book Acquisition System** as it is implemented for them and they have the full facilities of dBASE III+ in addition. Should they wish to use the dBASE BROWSE facilities or learn to use the dBASE report writer or learn to do some simple dBASE programming they could manipulate the content of their database files independent of the **Book Acquisition System**.

The distribution copy of the **Book Acquisition System** with this book provides a compiled version of the thirty-five program files for **BAS**. The source code, the thirty-five program files, are translated into machine language before they are distributed. Thus when you use the **BAS**, the programs have already been translated into machine language and many aspects of the system operate faster than their interpreted counterparts. The other major advantage to the compiled approach is that users do not have to own dBASE in order to use the **Book Acquisition System**. The disadvantage is that while the user has the full facilities of programming within **BAS** they are restricted to those facilities unless they own dBASE or a dBASE clone such as dbXL with which to gain access to database files independent of the **BAS**.

SUGGESTED READINGS

Library Automation and Information Systems

Several books are available which present various aspects of library systems analysis and automation; Dagobert Soergel's *Organizing Information* (Orlando, Florida: Academic Press, 1985), Dennis Reynolds' *Library Automation* (New York: Bowker, 1985) and Gerald Salton and Michael McGill's *Introduction to Modern Information Retrieval* (New York: McGraw-Hill, 1983).

Older but still useful is *Computers in the Library: A Handbook for Managers and Designers* (Los Angeles, CA: Melville, 1973). A practical handbook for the special librarian acting as a systems analyst is Edward John Kazlauskas' *Systems Analysis for Library Microcomputer Applications* (Studio City, California: Pacific Information, 1985).

From the UK are Lucy A. Tedd's *An Introduction to Computer-Based Library Systems* (2d edition; Chichester: John Wiley, 1984), Paul F. Burton and J. Howard Petrie's *The Librarian's Guide to Microcomputers for Information Management* (Wokingham, Berkshire: Van Nostrand Reinhold (UK), 1986), and J. E. Rowley's *Computers for Libraries* (2d edition; London: Clive Bingley, 1986).

John Corbin's *Developing Computer-based Library Systems* and *Managing the Library Automation Project* (Phoenix, AZ: Oryx, 1981 and 1985) are recommended. Joseph R. Matthews also has two books of interest, *Choosing an Automated Library System* and *A Reader on Choosing an Automated Library System* (Chicago: ALA, 1980 and 1983).

Extensive guidance on the topic of preparing a Request for Proposal for an automated library system is provided by Edwin M. Cortez in *Proposals and Contracts for Library Automation: Guidelines for Preparing RFPs* (Studio City, California: Pacific Information, 1987).

Systems Development

The Systems Approach by C. West Churchman (New York: Laurel, 1979) is one of the classic books presenting the management impetus for systems thinking.

An excellent hands-on book for systems projects is *Managing the System Development Project* by Charles L. Biggs, Evan G. Birks, and William Atkins (Englewood-Cliffs, NJ: Prentice-Hall, 1980).

James Martin's *An End-User's Guide to Data Base* (Englewood Cliffs, NJ: Prentice-Hall, 1981) is a non-technical introduction to data base management.

William Kent's "A Simple Guide to Five Normal Forms in Relational Database Theory" (*Communications of the ACM*. 26,no.2 [February 1983]: 120-25) provides a non-technical introduction to this important topic.

Administrative and management issues are covered in more depth in *Managing the Data-Base Environment* (Englewood Cliffs, NJ: Prentice-Hall, 1983) by James Martin and by Judy M. King in *Evaluating Data Base Management Systems* (New York: Van Nostrand Reinhold, 1981).

BOOK ACQUISITION SYSTEM

USER MANUAL

GETTING STARTED

The **Book Acquisition System** is designed to operate in the following environment:

1. An IBM PC, XT, AT, PS/2 or 100-percent compatible computer with at least 512 Kilobytes of RAM and DOS 2.1 or higher.
2. One 360K floppy drive and a fixed disk with at least 10 megabytes of storage.
3. A printer capable of condensed (15 characters-per-inch or smaller), elite, and pica printing using either the Epson or IBM Proprinter dot matrix character sets.

Two other installations are supported but do not permit use of all **BAS** utilities. Library schools using the **BAS** for lab work with fixed disk computers may install the system software on the fixed disk and prepare individual floppy data disks for student use in drive A. Other users who have two 360K floppy drives may install the system software for use in drive A and place the data files on drive B. Use of floppy disks for data limit the size of the **BAS** to the space available on one floppy disk. Floppy users should plan to restrict the size of the donor/vendor files to not more than fifty, fund codes to ten, purchase orders to fifty, and books described to one-hundred.

FORMAT THE BACKUP DISKS

A fixed disk **BAS** implementation supports backup of data to floppy disks. Format, without system files, seven (7) floppy disks. Six of the disks are divided into three sets and labeled **DISK SET # 1**, **DISK SET # 2**, and **DISK SET # 3**. Each set has one disk labeled **MONEY** and a second labeled **BOOKS**. The extra disk is used to backup the disk provided with this book.

Floppy disk users format three disks. One is used for the systems software and is formatted with system. A second is used for data files. The last is used to backup the disk provided with this book.

The **SYSTEM DISK** supplied with this book is not copy protected, copy all of the files on the disk to a formatted floppy disk. Label the disk **BAS SYSTEM DISK**. Store the original **SYSTEM DISK** in a safe place and use the copy to install the **BAS** system on your computer.

A list of the files supplied on the **SYSTEM DISK** appears on the following page.

BOOK ACQUISITION SYSTEM - SYSTEM DISK

BOOK	EXE	287382	[Compiled version of 35 programs]
ERROR	TXT	7296	[Error codes for compiled programs]
MANAGE	DBF	138	[Stores user specified parameters]
FUND	DBF	253	[Stores fund codes]
STATES	DBF	1958	[Stores state/province codes]
VENDOR	DBF	1037	[Stores vendor/donor data]
PURCHASE	DBF	667	[Stores purchase order data]
ITEM	DBF	1157	[Stores book descriptions]
FI_FUND	NDX	1024	[Key index for FUND.DBF]
SI_CODE	NDX	2048	[Key index for STATES.DBF]
VI_VEND	NDX	1024	[Key index for VENDOR.DBF]
PI_NUMB	NDX	1024	[Key index for PURCHASE.DBF]
II_NUMB	NDX	1024	[Key index for ITEM.DBF]
MR_A	FRM	1990	[Report form for report A]
MR_D	FRM	1990	[Report form for report D]
MR_E	FRM	1990	[Report form for report E]
MR_H	FRM	1990	[Report form for report H]
MR_I	FRM	1990	[Report form for report I]
MR_K	FRM	1990	[Report form for report K]
CONFIG	SYS	128	[Configure system on boot-up]
BOOK	BAT	256	[For root directory of fixed disk, typing "BOOK" will transfer user to appropriate subdirectory and begin execution of BAS]
INA	BAT	3072	[Install BAS on fixed disk, data on A]
INB	BAT	2176	[Installation of BAS on floppy disk drives]
INC	BAT	2816	[Installation of BAS on FIXED DISK]

INSTALLATION OF COMPLETE SYSTEM ON FIXED DISK

Place the backup copy of the system disk supplied with this book in drive A. Assuming that you are being prompted by drive C, transfer to drive A by typing "a:" and press the <Enter> key:

C> a: <Enter>

When prompted by drive A, type "inc" and press <Enter>:

A> inc <Enter>

The operation from this point on is automatic. The following screen will appear:

SCREEN 1 - FIXED DISK INSTALLATION

BOOK ACQUISITION SYSTEM

Copyright (c) 1988 ROGER C. PALMER

Installation

This installation program will copy all the files necessary
from diskette drive A: to FIXED DISK (hard) drive C.

If you do not want to copy, press CTRL-BREAK.

Unless you want to abort the install process, press <Enter>. The next screen you will see if this is a first-time installation for BAS will be either 2 or 4.

SCREEN 2 - FIXED DISK INSTALLATION

If a CONFIG.SYS file is not presently in the root directory of your fixed disk the following screen appears:

```
*  
* CONFIG.SYS is not present on drive C.  
* Press any key to make a copy on drive C.  
*  
* If you do not want to copy, press CTRL-BREAK.  
*
```

Unless there is some reason to interrupt the installation routine, you should press the <Enter> key to transfer a copy of CONFIG.SYS to drive C.

SCREEN 3 - FIXED DISK INSTALLATION

If you have previously installed the BAS a warning message will appear:

```
* The BOOK subdirectory already exists and contains  
* database files. If you really want to install the  
* Book Acquisition System again, you must first enter  
* the BOOK subdirectory on drive C and delete all files  
* contained in that subdirectory.  
*  
* This procedure WILL ERASE all data that you entered  
* into the Book Acquisition System. After deleting  
* the files, you may then use the install routine.
```

SCREEN 4 - FIXED DISK INSTALLATION

The installation program will make a new subdirectory for book and transfer appropriate files to the fixed disk.

- *
* A new subdirectory called BOOK will be created and all the
* the files needed for the BOOK ACQUISITION SYSTEM will be
* transferred after you press any key.
*
* If you do not want to copy, press CTRL-BREAK.
*

Unless you want to abort the installation, press <Enter>. The program will:

Copy BOOK.BAT to the root directory on drive C
Make a new directory under the root called BOOK
COPY BOOK.EXE to the BOOK subdirectory
Copy ERROR.TXT file to BOOK
Copy six files with a .DBF extension to BOOK
Copy five files with a .NDX extension to BOOK
Copy six files with a .FRM extension to BOOK

SCREEN 5 - FIXED DISK INSTALLATION

The last screen will appear.

- * Remove the installation disk from drive A and
* store it in a safe place.
*
* If the DOS prompt below is "A>" (this will be the
* case for some IBM compatibles), transfer to drive
* C by typing the letter C followed by a colon.
*
* If the prompt is "C>" (this will be the case for
* IBM personal computers), you do not need to change
* drives.
*
* To start the Book Acquisition System, after the DOS "C>"
* prompt type the word BOOK in upper- or lowercase and then
* press the "Enter" key.

INSTALL DATA FILES ON DRIVE A

This installation is designed for library schools. Place the backup copy of the system disk supplied with this book in drive A. Assuming that you are being prompted by drive C, transfer to drive A by typing "a:" and press the <Enter> key:

C> a: <Enter>

When prompted by drive A, type "ina" and press <Enter>:

A> ina <Enter>

The operation from this point on is automatic. The following screen will appear:

SCREEN 1 - DATA FILES ON DRIVE A INSTALLATION

```
*
*          BOOK ACQUISITION SYSTEM
*
*          Copyright (c) 1988  ROGER C. PALMER
*
*          SPECIAL INSTALLATION - FOR LIBRARY SCHOOLS
*
*          This installation program is designed for library schools
*          which have fixed disk IBM PC's (or 100 percent compatibles).
*
*          This install program will place the executable and management
*          files on fixed disk drive C and will transfer the database files
*          and indexes to a formatted diskette for use by students.
*
*          Place a formatted blank diskette in drive B.
*
*          After this installation is complete, use the disk from drive B
*          as a master and make as many copies as are needed to provide
*          each member of the class with his/her own data diskette.
*
*          Students will use the system from drive C with their data
*          disks in drive A.
*
*          If you do not want to copy, press CTRL-BREAK.
```

Unless you want to abort the install process, press <Enter>. The next screen you will see if this is a first-time installation for BAS will be either 2 or 3.

SCREEN 2 - DATA FILES ON DRIVE A INSTALLATION

If a CONFIG.SYS file is not presently in the root directory of your fixed disk the following screen appears:

```
*  
* CONFIG.SYS is not present on drive C.  
* Press any key to make a copy on drive C.  
*  
* If you do not want to copy, press CTRL-BREAK.  
*  
*
```

Unless there is some reason to interrupt the installation routine, you should press the <Enter> key to transfer a copy of CONFIG.SYS to drive C.

SCREEN 3 - DATA FILES ON DRIVE A INSTALLATION

The installation program will make a new subdirectory for book and transfer appropriate files to the fixed disk.

```
*  
*  
* A new subdirectory called BOOK will be created and all the  
* the files needed for the BOOK ACQUISITION SYSTEM will be  
* transferred after you press any key.  
*  
* If you do not want to copy, press CTRL-BREAK.  
*  
*
```

Unless you want to abort the installation, press <Enter>. The program will:

```
Copy BOOK.BAT to the root directory on drive C  
Make a new directory under the root called BOOK  
Copy BOOK.EXE to the BOOK subdirectory  
Copy ERROR.TXT to BOOK  
Copy MANAGE.DBF to BOOK
```

SCREEN 4 - DATA FILES ON DRIVE A INSTALLATION

The next screen prepares for transfer of data files to the blank formatted disk in drive B.

- * Data files will be copied to a formatted disk in
- * drive B.
- *
- * If you do not want to copy, press CTRL-BREAK.
- *

Unless you want to abort the installation, press <Enter>. The program will copy the following to the disk in drive B:

ERROR.TXT
FUND.DBF
VENDOR.DBF
PURCHASE.DBF
ITEM.DBF
STATES.DBF
Five index files with .NDX extension
Six report form files with .FRM extension

SCREEN 5 - DATA FILES ON DRIVE A INSTALLATION

The last screen will appear:

- * Remove the installation disk from drive A and
- * store it in a safe place.
- *
- * If the DOS prompt below is "A>" (this will be the
- * case for some IBM compatibles), transfer to drive
- * C by typing the letter C followed by a colon.
- *
- * If the prompt is "C>" (this will be the case for
- * IBM personal computers), you do not need to change
- * drives.
- *
- * To start the Book Acquisition System, place the data
- * disk in drive A and after the DOS "C>" prompt type the
- * word BOOK in upper- or lowercase and then press the
- * "Enter" key.

TWO FLOPPY DISK INSTALLATION

If you are using a two-floppy drive system without a fixed disk, make sure that the DOS disk that you use when the system is started contains a copy of the CONFIG.SYS file supplied on the disk that comes with this book.

There may be enough room on a 360K floppy drive and older versions of DOS (2.1 to 3.1) to format a disk with system to be used in drive A. If not, the CONFIG.SYS file must be on the DOS boot disk and both disks to which the files are copied would be formatted without system files. *This is a very limited environment for the BAS and supports few records in the various files. The system functions much more slowly from floppy disks.*

Place the backup copy of the system disk supplied with this book in drive A. Assuming that you are being prompted by drive C, transfer to drive A by typing "a:" and press the <Enter> key:

```
C> a: <Enter>
```

When prompted by drive A, type "inb" and press <Enter>:

```
A> inb <Enter>
```

SCREEN 1 - TWO FLOPPY DISK INSTALLATION

```
*
*          BOOK ACQUISITION SYSTEM
*
*          Copyright (c) 1988  ROGER C. PALMER
*
*          SPECIAL INSTALLATION - FOR 2 FLOPPY DRIVES
*
*          This installation program is designed for 2 FLOPPY drives
*          on an IBM PC (or 100 percent compatible).
*
*          This program will place the executable and management
*          files on a floppy disk formatted with the system files.
*          The database files and indexes will be copied to a
*          formatted disk without system files.
*
*          Place a formatted disk with system files in drive B.
*
*          If you do not want to copy, press CTRL-BREAK.
```

Unless you want to abort the install process, press <Enter>.

The following files will be copied to the formatted disk in drive B:

CONFIG.SYS
BOOK.EXE
MANAGE.DBF

SCREEN 2 - TWO FLOPPY DISK INSTALLATION

Place the second formatted disk in drive B and continue.

- *
- * Remove the system disk from drive B and replace it
- * with a formatted disk that does not have system files.
- *
- * Data files will be copied to a formatted disk in
- * drive B.
- *
- * If you do not want to copy, press CTRL-BREAK.
- *
- *

SCREEN 3 - TWO FLOPPY DISK INSTALLATION

If the disk inserted in drive B has system files the following screen will appear.

- *
- *
- * The disk in drive B has system files. Replace it with
- * a disk that has been formatted without system files and
- * start this installation program again from the beginning.
- *
- *

Otherwise the following files will be copied to drive B:

ERROR.TXT

FUND.DBF

VENDOR.DBF

PURCHASE.DBF

ITEM.DBF

STATES.DBF

Five index files with a .NDX extension

Six report form files with a .FRM extension

SCREEN 4 - TWO FLOPPY DISK INSTALLATION

The last screen appears:

- * Remove the installation disk from drive A and
- * store it in a safe place.
- *
- * To start the Book Acquisition System, place the system
- * disk in drive A and the data disk in drive B. Type the
- * word BOOK in upper- or lowercase and then press the
- * "Enter" key.
- *

MANUAL INSTALLATION

For manual installations, make sure the files are located on the correct disk.

Fixed Disk

Root directory of drive C:

BOOK.BAT
CONFIG.SYS

BOOK subdirectory on drive C:

All other files on installation disk except INA.BAT,
INB.BAT, and INC.BAT.

Data on Drive A

Root directory of drive C:

BOOK.BAT
CONFIG.SYS

BOOK subdirectory of drive C:

BOOK.EXE
ERROR.TXT
MANAGE.DBF

Floppy disk in drive A formatted without system:

ERROR.TXT
FUND.DBF
VENDOR.DBF
PURCHASE.DBF
ITEM.DBF
STATES.DBF
All .NDX files
All .FRM files

Two Floppy Installation

Drive A:

If there is space for system files, then the CONFIG.SYS file should be on drive A. If there is not room for system files, the CONFIG.SYS file should be copied to the DOS boot disk.

BOOK.EXE
MANAGE.DBF

Drive B:

ERROR.TXT
FUND.DBF
VENDOR.DBF
PURCHASE.DBF
ITEM.DBF
STATES.DBF
All .NDX files
All .FRM files

INITIALIZE THE SYSTEM

The files for **BAS** are supplied with the following installation control codes:

1. The user will be operating from a fixed disk (all files on drive C).
2. The user will be printing on an Epson compatible printer.
3. The user wants the sales tax rate set at 0%.

Reset the system by pressing the three keys <Ctrl> and <Alt> and <Del> simultaneously.

To start the system, type "BOOK" from the root directory on drive C or from drive A on a two drive system:

C:> book <Enter>

Skip to page 61 if no control code changes are required.

Book Acquisition System Main Menu

To change control codes, choose to execute the "Database Management Utilities", option "5".

BOOK ACQUISITION SYSTEM MAIN MENU	Release 7
Enter choice:	
1 = Vendor, Donor, Fund Authority Data	
2 = Add or Edit Book Acquisition Data	
3 = Prepare Printed Reports and Forms	
4 = Online Search by Author or Title	
5 = Database Management Utilities	
0 = EXIT	
Today is: 04/12/88	

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--

Utilities Menu

Choose to change the drive, printer and sales tax selections, option "2".

BOOK ACQUISITION SYSTEM Database Management Utilities

Enter choice:

- 1 = Pack files and Rebuild Indexes
- 2 = Install Drive, Printer, and Sales Tax
- 3 = Backup files to Drive A
- 4 = Restore files from Drive A
- 5 = Purge data for a Fiscal Year
- 6 = Restore purged data for a Fiscal Year

Key <Enter> to return to Main Menu

CHANGE CONTROL CODES MENU

CHANGE CONTROL CODES

Key "D" to change DRIVE
Key "P" to change PRINTER
Key "S" to change SALES TAX RATE

Press <Enter> to exit

Change Default Data Drive

Type "D" to change the drive specification for data files.

The default is set to "1" for hard disk; choose "2" for data files on drive A or "3" for two floppy installations.

Key "D" to change DRIVE
Key "P" to change PRINTER
Key "S" to change SALES TAX RATE

Press <Enter> to exit D

<< Drive Selection >>
1 = All files on hard disk
2 = Data files on drive A
3 = Data files on drive B

Type: 2

Any corrections? (Y OR N) N

Other parameter changes? (Y OR N) Y

Change Default Printer

Type "P" to change default printer.

To change from Epson to an IBM Proprinter, type "2". Type "n" when finished with corrections. Type "y" for other parameter changes or 'n' to quit making parameter changes.

Key "D" to change DRIVE
Key "P" to change PRINTER
Key "S" to change SALES TAX RATE

Press <Enter> to exit P

<< Printer Mode Selection >>
1 = Epson compatible
2 = IBM Proprinter

Type: 2

Any corrections? (Y OR N) N

Other parameter changes? (Y OR N) Y

Set New Sales Tax Rate

Type "S" to change sales tax.

If your library must pay a sales tax on purchases, enter the applicable rate and it is computed automatically for purchase order financial data. The default is set to 0.0000. For a rate of 6.5%, enter "0.0650" and the system confirms by indicating the amount of tax on a ten dollar purchase. If there is a problem key "y" to correct and try again. When satisfied key "n" to corrections and other changes.

Key "D" to change DRIVE
Key "P" to change PRINTER
Key "S" to change SALES TAX RATE

Press <Enter> to exit S

-- Sales Tax Rate --

Examples: For 3% key "0.0300"
For 3.5% key "0.0350"
For 7 1/4% key "0.0725"

Tax rate: 0.0650

Sales tax on \$10.00 is: \$ 0.65

Any corrections? (Y OR N) N

Other parameter changes? (Y OR N) Y

Initialization is now complete. When the "Utilities" menu appears, press the <Enter> key to return to the MAIN MENU. From the MAIN MENU, type the numeric zero to EXIT.

STARTING THE SYSTEM

If you have just finished the install process, reboot the system (press the <Ctrl> key and the <Alt> key and the <Del> key simultaneously). This will configure the system. To start the **Book Acquisition System**, on a fixed disk type the word "book" and press the <Enter> key while in the root directory:

```
C> book <Enter>
```

Students with a separate data disk follow the above procedure except that their data disk is in drive A and the latch on drive A must be closed.

It takes about twelve (12) seconds on an IBM PC to load the system from a fixed disk. While the system is loading, the following message appears on the screen:

```
* One moment please! Loading BOOK ACQUISITION SYSTEM.
```

If you used the automatic install routine "inc" described on pages 44 to 46 or "ina" described on pages 47 to 49, the MAIN MENU should appear without any problems. If the above message does not display when you type and enter the word "book," make sure you are in the root directory of drive C by typing "cd\":

```
C> cd\ <Enter>
C> book <Enter>
```

Users with a two floppy drive system must boot (turn on the computer) with the DOS system files and the CONFIG.SYS file in drive A. With the **BAS** system disk in drive A and the data files in drive B, type the word "book" and and press the <Enter> key:

```
A> book <Enter>
```

The MAIN MENU will not appear if the **MANAGE.DBF** is not on drive A with the **BOOK.EXE** file. The automatic install routine, "inb" ensures the proper placement of files on disks A and B (see pages 50 to 52 and page 54). To ensure proper execution of the system, make sure that the **CONFIG.SYS** file is present on the disk that is inserted in drive A when the system is started.

Users who had a **CONFIG.SYS** file on their systems prior to **BAS** installation must ensure the following minimums are represented in the file:

```
FILES=20
BUFFERS=22
```

MAIN MENU

Use of the **BAS** requires that you enter into authority records the names and addresses of vendors and donors before you create an acquisition record (purchase order, donation, internal transfer). The fund codes from which acquisitions are to be paid must also be created before creation of an acquisition record. Option 1 from the MAIN MENU transfers you to the authority subsystem where authority records are added, edited or deleted.

Acquisition records are added, edited, or deleted from option 2 of the MAIN MENU.

Printed reports and forms are generated from option 3 of the MAIN MENU.

Online searching based on the first fifteen or fewer characters of main entries, authors, or titles is supported from option 4.

Utilities, option 5, enable users to select drives, printers, and set sales tax rates. Backups and restores are available. Most important, to keep the database files and indexes in order, plan to pack files and rebuild indexes (option 1 on the UTILITY MENU), after adding or deleting each one-hundred records. If the system appears to lose track of records added, this utility should fix the problem.

When using the system, cursor control keys (arrow keys, the <Ins>ert key and the <Del>ete keys) can be used.

BOOK ACQUISITION SYSTEM	Release 7
MAIN MENU	
Enter choice:	
1 = Vendor, Donor, Fund Authority Data	
2 = Add or Edit Book Acquisition Data	
3 = Prepare Printed Reports and Forms	
4 = Online Search by Author or Title	
5 = Database Management Utilities	
0 = EXIT	
Today is: 04/12/88	

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MAIN MENU OPTION 1

AUTHORITY FILES

VENDORS AND DONORS

There is an authority file for current source information (address and other data) for vendors and donors. The key to the file is a four to six character code. The system is supplied with one code, "LATER," which the user specifies when assignment of a source to an acquisition is to occur after initial data entry.

Whenever an order is placed with a vendor, the system prompts only for the code. The system automatically looks in the authority file for name and address data to type on the purchase order form.

Donors are added to the vendor/donor authority file by keying a code such as "DDDMAR" where the "DDD" signifies a donor and the "MAR" is based on the name of the donor. When 3 x 5 catalog slips are printed, the system automatically types "GIFT" on the form when the source code begins with "DDD".

Before adding records to the vendor/donor file, the librarian should review acquisitions for the previous twelve to twenty-four months.

For each source, the following data can be entered into the authority file:

<u>SCREEN NAME</u>	<u>DBF NAME</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
Source code	VA_VEND	6	Vendor or donor code
Name	VA_NAME	35	Vendor/donor name
Address	VA_ADD1	35	Address
(window)	VA_ADD2	35	Address
(window)	VA_ADD3	35	Address
City	VA_CITY	25	City
State	VA_PROV	2	State/Province
ZIP	VA_ZIPC	15	US/foreign postal code
Country	VA_COUN	15	Country
Phone	VA_PHON	15	Telephone number
Discount	VA_DISC	30	Discount
Account	VA_ACCT	15	Account number
Notes	VA_NOTE	30	Note

A vendor/donor authority file data entry form should be completed for each vendor or donor to be added to the authority file. The format of the form should correspond to the data entry screen (see page 68).

The "name" is specified as you wish it to look when typed on a purchase order. There are up to three "address" lines along with a "city" field. The two-character "state" abbreviation is for use with U.S. and Canadian vendors only. The "zip" should be used for all postal codes; U.S., Canadian, and foreign. The "country" is filled in as USA by default and should be replaced if it is not the U.S. There is room for one "telephone" number. Any "discount" information is specified since it displays at the time a vendor is designated

when preparing a purchase order. Discount data is keyed as character rather than numeric because vendors provide sliding rates depending on quantity or other qualifications. If the vendor has assigned the library an "account" number it is included. A brief "note" about the vendor may be typed. The sizes of the fields listed on the previous page are maximums. The "name" may be up to 35 characters long including spaces.

There should be one form for each vendor. In the case of orders to vendors with multiple offices, there should be one form for each office to which orders are sent (e.g., Baker & Taylor - Somerville, NJ; Baker & Taylor - Momence, IL; Baker & Taylor - Atlanta, GA; Baker & Taylor - Reno, NV).

The next step is to arrange the forms in zipcode sequence and ensure that there are no duplicates. Arrangement in alphabetical order by name might miss duplicate entries where the name is J. A. Allen & Company on one form and a second form is filed as Allen & Company. Remove duplicates.

The vendors must be assigned codes of from four to six alphabetic characters. It is suggested that the codes be both mnemonic and systematic. An example is AIARCH as the code for the American Institute of Architects. The Baker & Taylor offices might be coded:

BTSOME
BTMOME
BTATLA
BTRENO

After some experimentation, it is a good idea to begin enumerating a series of rules for the codes so that they will be easy to remember. Avoid coding inconsistencies such as WILSON for The H. W. Wilson Company and RRBOWK for The R. R. Bowker Company.

Repeat the above process with donors. After completing forms for each, assign the donors a six-character code that begins with "DDD" and concludes with elements of the name. For example, DDDMAR for Mr. and Mrs. James A. Martin.

Authority Menu

BOOK ACQUISITION SYSTEM Vendor, Donor, Fund Authority Enter choice: 1 = Add/Edit Vendors/Donors 2 = Delete Vendors/Donors 3 = Add/Edit Funds 4 = Delete Funds Key <Enter> to return to Main Menu
--

Option 1 - Add/Edit Vendors/Donors

Option 1 is used to add or edit vendor or donor records. The user is prompted for a vendor or donor source code.

To enter a new code, key four to six characters for a vendor. For a donor key "DDD" plus three characters of the donor's name. Over time it may be necessary to alter the third character of the donor last name if it matches a code already in use. Choose an alternative last character that will place the new donor in appropriate alphabetical sequence.

If a match is found the corresponding record will display. If a match is not found the system prompts to determine if you want to create a new record with the code.

Keying the first or first and second character of a code followed by an asterisk will produce a list of nine codes already in the system beginning with the character(s) keyed.

The user may perform searches as many times as needed to find an existing code or to ensure that a new code is not already in the system. The system will prevent the addition of duplicate codes.

ADD/EDIT VENDOR AND DONOR CODES

Key <Enter> to exit

Source code: GE*

Enter vendor/donor code; for display of current codes, key up to first two characters followed by an asterisk, for example: C* -OR- GE*

CODE	VENDOR/DONOR
GEFMUS	Geoffrye Museum
GETTY	The J. Paul Getty Museum Bookstore
GIUNTI	Giunti Distribution Service, Inc.
GKHALL	G.K. Hall & Company
GOLDCO	Goldsmith's Company
GOLLAN	Gollancz Publishers
GRANAD	Granada Publishing Company
GREEWO	Greenwood Press, Inc.
GROVE	Grove

Key enter to continue

Because all donors begin with "DDD", a search for donors may be entered as "D*" or "DD*" or "DD*M" where the first character following the asterisk is the first character of the donor's name code.

ADD/EDIT VENDOR AND DONOR CODES

Key <Enter> to exit

Source code: DD*M

Enter vendor/donor code; for display of current codes, key up to first two characters followed by an asterisk, for example: C* -OR- GE*

CODE	VENDOR/DONOR
DDDMAR	Mr. and Mrs. Roger Martin
DDDNEW	Mr. and Mrs. Clark Newton
DDDRN	Mrs. Marjorie Rennsyleer
DDDRID	John H. Riddle
DDDRIX	Stephen Rixell
DDDWAL	Benton Waldhus
DDDWAR	Richard C. Warner
DELAM	Delaware Art Museum
DENT	J M Dent & Sons (Distribution) Ltd

Key enter to continue

Enter the name and address data. For help on state or province two-character codes, key the first character plus an asterisk to see a state and province help display. Both the name data and the discount data will display when adding or editing acquisition data. Overtyping USA for foreign vendors or donors. All countries other than USA will be typed on forms, the country code is not typed on forms when the code is USA.

CODE GETTY

Name: The J. Paul Getty Museum Bookstore

Address: 17985 Pacific Coast Highway

City: Malibu

State: C*

ZIP:

Country:

Phone:

Discount:

Account:

Notes:

STATE/PROVINCE ABBREVIATIONS

CA CALIFORNIA
 CO COLORADO
 CT CONNECTICUT
 DC DISTRICT OF COLUMBIA
 DE DELAWARE
 FL FLORIDA
 GA GEORGIA
 HI HAWAII
 IA IOWA
 ID IDAHO
 IL ILLINOIS

Option 2 - Delete Vendors/Donors

Enter a vendor/donor code to be deleted.

```
DELETE VENDOR/DONOR
Key <Enter> to Exit
VENDOR/DONOR code:  GETTY
```

If there are orders associated with a code that you wish to delete, the system will list all associated acquisition numbers. You must substitute a new code (using the acquisition edit system) for the code you wish to delete before the system will permit the deletion of the vendor or donor code.

```
Vendor/Donor Code Search in Financial Files for:  GETTY
```

```
VENDOR/DONOR CODES FOR THE FOLLOWING MUST BE CHANGED
```

```
1  B70031
```

```
Press <Enter> to clear  --->> HITS =  1<<---
```

When acquisition orders have no codes associated with a vendor or donor source code, the system will display a partial record. You must key a "D" to delete the record, pressing any other key will abort the delete.

CODE

GETTY

Name: The J. Paul Getty Museum Bookstore
Address: 17985 Pacific Coast Highway
City: Malibu

Notes:

Key "D" to Delete.

FUND CODES

The second authority file supported by BAS controls fund codes. The system assumes that the library maintains one or more accounting funds against which purchases are charged. These funds are to be assigned a unique number code from 101 to 997. A descriptive phrase may be associated with each code. The key to the file is a six-digit numeric code. The system comes with three codes already installed:

100 - fund code to be assigned (used when the allocation to a fund is to be determined at some time after the purchase order or donation is recorded.

998 - transfer internal to organization

999 - gift (donation)

A list of all funds against which charges are to be made should be compiled. A three digit number for each account is based on either the actual fund code or a numbering scheme that makes sense within the fund accounting structure of the library or parent organization. While entering an acquisition record (purchase order or donation), code 100 is used if a later determination will be made for fund accounting, 998 is used for transfers of books internal to the organization (e.g., parent library to branch library), and 999 is used for donations. The following fields are prompted for adding fund codes to the system:

<u>SCREEN NAME</u>	<u>DBF NAME</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
Fund code	FA_FUND	3	Three-digit numeric code
Description	FA_DESC	35	Fund name/description

Accounting activities in BAS are additive rather than subtractive. As purchase orders are generated the user is prompted for one or two fund codes against which the acquisition is to be charged. The totals expended and encumbered for that acquisition are maintained in the financial data associated with the acquisition.

A central allocation for a fund against which each acquisition total is debited is not maintained. This is the case because the library for which the system was designed does not control fund allocations or expenditures, these are controlled by a central library. To determine the current acquisitions charged against each of the funds and the totals expended and encumbered for each within a fiscal year, the user selects report K from the Print Reports and Forms subsystem.

Option 3 - Add/Edit Fund Codes

To add or edit a fund code, key a number from 101 to 997.

ADD/EDIT FUND CODE	
FUND CODE	101
DESCRIPTION	

When a code is no longer used, prefixing the description with an asterisk, "*", will cause the system to warn the user to employ an alternative code for new orders. The fund code authority file ensures that fund accounting reports are accurately maintained. An order cannot be posted to a fund that is not in the authority system.

When a fund code is discontinued, press the <Ins>ert key on your keyboard and place an asterisk at the start of the description. This will prohibit the fund from being assigned when adding a new acquisition. The asterisk does not inhibit the edit process.

ADD/EDIT FUND CODE	
FUND CODE	417
DESCRIPTION	*Use fund code 711 --- NOT VALID

Option 4 - Delete Fund Code

Key the fund code to delete. The record will appear. Key a "D" to delete the code. Pressing any other key will abort the delete.

Warning: The system does not check to see if orders are assigned to a fund code prior to deletion. Codes no longer used which have been previously assigned to orders should have an asterisk inserted in the description rather than deleting the code. The delete feature for fund codes is intended for use when a mistake is made on entering a new fund code and the user wishes to delete the newly added code.

DELETE FUND CODE	
Key <Enter> to Exit	
FUND code:	101

FUND CODE	101
DESCRIPTION	

Key "D" to Delete this FUND.

MAIN MENU OPTION 2

BOOK ACQUISITIONS

The **BAS** provides facilities to create acquisition data for up to nine book titles associated with a single acquisition number (each book title may be specified in any quantity). Data for a book title is stored in the ITEM database file.

For any given acquisition there are between one (1) and nine (9) records stored in the ITEM database file, one record for each book title.

<u>SCREEN NAME</u>	<u>DBF NAME</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
(not prompted)	IA_NUMB	6	Acquisition number
(not prompted)	IA_ITEM	7	Item number
MAIN ENTRY	IA_MAIN	80	Main entry
AUTHOR 2	IA_AUT2	50	Second author
AUTHOR 3	IA_AUT3	50	Third author
TITLE	IA_TITL	65	Title

LC CARD #	IA_LIBC	10	LC catalog set number
ISBN or CATALOG...	IA_CALL	15	ISBN or catalog reference
PLACE	IA_PLAC	25	Place of publication
PUBLISHER	IA_PUBL	30	Publisher
DATE	IA_DATE	7	Date of publication
EDITION	IA_EDIT	15	Edition
REQUESTOR	IA_REQU	3	Requested by
Ok by	IA_OKBY	3	OK by
NOTE	IA_NOTE	50	Note
SEARCHER initials	IA_SEAR	3	Searcher
Quantity	IA_QUAN	1	Quantity (numeric)
Foreign price	IA_FPRI	15	Foreign price
Net Price	IA_APRI	7,2	Price (numeric 9999.99)
Date received	IA_REC'D	Date	Date received
STATUS	IA_STAT	1	Status of book title

Collective information about the acquisition as a whole is maintained in the PURCHASE database file:

<u>SCREEN NAME</u>	<u>DBF NAME</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
ACQUISITION NUMBER	PA_NUMB	6	Acquisition number
* Order Date	PA_ORDE	Date	Date of order
Source code	PA_VEND	6	Vendor/donor code

(not prompted)	PA_FISC	2	Fiscal year (numeric)
Purchases	PA_TOTL	8,2	Order total (numeric 99999.99)
Sales Tax	PA_SALE	6,2	Sales tax (numeric 999.99)
Shipping	PA_SHIP	6,2	Shipping (numeric 999.99)
Fees	PA_FEES	6,2	Fees (numeric 999.99)
Fund 1	PA_FUN1	3	Fund code 1
Expended	PA_EXP1	9,2	Spent 1 (numeric 999999.99)
Encumbered	PA_ENC1	9,2	Encumber 1 (numeric 999999.99)
Fund 2	PA_FUN2	3	Fund code 2
Expended	PA_EXP2	9,2	Spent 2 (numeric 999999.99)
Encumbered	PA_ENC2	9,2	Encumber 2 (numeric 999999.99)
Invoice #	PA-INVO	30	Invoice numbers
(not prompted)	PA_STAT	1	Status of acquisition X = completed I = incomplete

ADD/EDIT MAIN SCREEN

Option 2 from the MAIN MENU displays the menu for adding or editing book acquisitions. The add/edit screen for acquisition data prompts for the initials of the searcher (the person who prepared the data to be entered and/or the person keying the data into the system). These initials will be stored in the ITEM database file to identify the individual responsible for the information about each book title.

The system indicates the last acquisition number on file.

The number must have six (6) digits. The first two numbers represent the fiscal year in which the order is placed. The last four digits represent a range of acquisition numbers associated with the fiscal year beginning with "0001" and extending to "9999".

Keying a number equal to or less than the last acquisition number on file transfers the user to the edit acquisition mode.

If the user keys a number greater than the last number on file, the user is placed in the add acquisition mode.

```
ADD or EDIT BOOK ACQUISITION DATA
Key <Enter> to exit
```

```
SEARCHER name code: RCP
```

```
The last acquisition number on file is: 880067
```

```
Enter ACQUISITION NUMBER -or- press <Enter> to exit 880068
```

```
====> Note: Numbers must begin with two digits representing the Fiscal Year.
           The next four digits represent the sequence number.
           Example: 860001 <====
```

```
This is a new number, do you wish to add it? (Y or N)
```

ADD BOOK ACQUISITIONS

Assign Status Screen

One of four status codes is assigned to a new acquisition. Records are generated for books that are paid by invoice, prepaid, transfers from other entities, transfers within the larger organization, or gifts.

ACQUISITION NUMBER: 880068

SEARCHER: RCP

STATUS: 2 Change status? Y

Approved status codes:

2 = Pay later

3 = Prepay

6 = Gift

7 = Transfer

Book Description Screen

The main entry is 60 characters wide but 80 characters can be entered, the system scrolls to the left for additional characters. Personal name authors are entered in inverted style (Smith, John C.). Key the exact amount that you expect to pay for the item in the net price field since the number keyed here is added together with prices for other items associated with the order and posted as expended (prepaid orders) or encumbered (pay later orders) against designated fund(s). If a book lists at \$2.50 and the library receives a 10% discount and the quantity ordered is two (2), the amount keyed for net price is \$4.50. The field for publisher's catalog reference is used for ISBN's or, for second hand items from a vendor catalog, the vendor's catalog number and item number.

P. O. NUMBER: 880068 Item: 1 SEARCHER: PCP

MAIN ENTRY: rsity. Los Angeles. William Andrews Clark Memorial Library.

AUTHOR 2:

AUTHOR 3:

TITLE: Annus notabilis. An exhibition of books and manuscripts...

EDITION:

PLACE: Los Angeles

PUBLISHER: [Castle Press]

DATE: 1981

REQUESTOR: sdw OK by: dgw

LC CARD #

Quantity: 1

Foreign Price:

Net Price: 12.50

ISBN or CATALOG REFERENCE:

NOTE:

Any changes? Y

Decision to Continue Adding Books Screen

After completing the catalog data for an item, you are prompted to add another book ("Y"), quit adding books and transfer to the financial activities ("N"), or exit without saving your work if you have entered only one item ("X").

Add another book? Y

Key "Y" to add another book.
Key "N" if you are finished adding books.
Key "X" to exit without saving.

Key "Y" to confirm: N

Note: Up to nine (9) books permitted.

Order Date Screen

By default the order date associated with the order is the current date, automatically picked-up by the system from the date supplied to DOS when the computer is turned on. You can either accept the date or change it.

ADD or EDIT ORDER DATE

Order Date: 04/12/88

Changes? (Y or N)-Y-

Specify Vendor Screen

The system prompts for a vendor or donor from which the items are to be obtained. You can search the vendor/donor file for possibilities and then key the code for a selected vendor (shown). Your selection is confirmed with a full name and discount information. Use the source code "LATER" if the source is to be determined.

ADD or EDIT SOURCE CODE: > < _____	
Key <Enter> to exit	
Source code: HENING	Hennessy & Ingalls, Inc. 0

CODE	VENDOR/DONOR
HENING	Hennessy & Ingalls, Inc.
HIGHMA	High Museum of Art
HINE	Hine Incorporated
HMSO	Her Majesty's Stationery Office
HNOC	The Historic New Orleans Collection
HOBNOB	Hobnob Press
HOLMEI	Holmes & Meier Publishers, Inc.
HONEY	Honeywood Press
HOUMIF	Houghton Mifflin Company

Key enter to continue

Changes? (Y OR N) -Y-

Fund Assignment - 1

On PAY LATER orders the system adds all of the prices together for the up to nine items associated with a purchase order. Use the fund code "100" if the fund is to be determined.

Note: If an order is for a quantity greater than one, you must key the total in the price for the item, the system does not manipulate quantity times price data.

ACQUISITION NUMBER: 880068

SEARCHER: RCP

Total Encumbered: 25.00

Any changes? N

----- ASSIGNMENT OF EXPENSES TO FUNDS -----
Fund 1:

Fund Assignment - 2

Key the first digit of a fund code to see a list of fund codes available.

ACQUISITION NUMBER: 880068

Total Encumbered: 25.00

FUND	DESCRIPTION
417	*Use fund code 711 --- NOT VALID
460	460-6070 Schweppe Fund
461	461-6070 Scott
479	479 - Green/Schweppe - unbudgeted
711	711 Scott - Unbudgeted
998	Transfer internal to organization
999	Gift

Key <Enter> to continue

----- ASSIGNMENT OF EXPENSES TO FUNDS -----
Fund 1: 4

Fund Assignment - 3

Two fund codes can be assigned to one acquisition.

ACQUISITION NUMBER: 880068

Total Encumbered: 25.00

Do you want split the costs
between two funds?
N

----- ASSIGNMENT OF EXPENSES TO FUNDS -----
Fund 1: 460

Encumber: 25.00

Any changes? Y

EDIT BOOK ACQUISITIONS

Edit Selection Screen

Keying a number less than the last number on file transfers the user from the main add/edit screen to the edit mode.

Up to nine items are displayed on the edit mode screen. Six edit activities are available. Options A, C, E, and F will prompt for an item number. You can change the status for each book ("A"), change the catalog data for each book ("C"), add a book to the purchase order ("E"), or delete a book from a purchase order ("F"). Options B and D relate to the financial data for the acquisition. You can change the order date or vendor/donor associated with the acquisition ("B") and update the financial data ("D").

ACQUISITION NUMBER: 870018 [nine (9) titles permitted]

BOOK # TITLES

- 1 The Early English Delftware from London and Virginia
- 2 Early prints of Ceylon (sri Lanka) 1800-1900
- 3 Medalic Illustrations of the History of Great
- 4 The Origins of Museums: the cabinet of curiosities
- 5 Houses of Glass: A nineteenth century building
- 6 The architecture of Norman Britain
- 7 Ridgway Porcelains
- 8 The 14th and 15th centuries.
- 9 The work of John Vanbrugh

THE FOLLOWING OPTIONS ARE AVAILABLE:

- | | |
|----------------------------------|------------------------------|
| A - Change Status (by book #) | E - Add New Book (by book #) |
| B - Change Order Date/Vendor | F - Delete Book (by book #) |
| C - Change Book data (by book #) | |
| D - Change Acquisition data | |

Key <Enter> to exit

OPTION: A BOOK # to process:

Option A - Change Status

One of nine status codes can be assigned to a book in the edit mode, see page 78 for the four codes permitted in the add mode.

Receipt date and price changes can be entered on this screen.

Note: Prepaid books that have been backordered should be left as status 3 (prepay). Status 1 is for backordered books that are to be invoiced.

Option B - Change Order Date/Vendor

It is likely that the only reason an order date may require change is either for retrospective data entry of acquisitions or to correct a typo that occurred in the add process. The screen and procedure are the same as shown in the add section, see page 81.

Changing a vendor also is unlikely except to correct a data entry error in the add process. The screens to make the changes were shown as part of the add process, see page 82.

Option C - Change Book Data

The screen for changing a book description is the same as that used for adding book data, see page 79.

Option D - Change Acquisition Data - 1

Based on status codes the system posts the amount encumbered and the amount expended and computes sales taxes for expenditures. This is advisory information. You control the actual amounts used by the system for financial reporting.

ACQUISITION NUMBER: 87001B	SEARCHER: RCP
{totals computed today}	
Encumbered:	60.00
Purchases:	401.50
Sales Tax:	26.10

PREVIOUS VALUES
Replace the following with the
above values as appropriate

Purchases:	359.85
------------	--------

Option D - Change Acquisition Data - 2

Any changes in prices should be posted in the status change screen. You key the total of purchases, the system computes the sales tax, you key the shipping and fees, the system adds the list and presents a total paid. On partial shipments, shipping and fees will be filled with previous values, use new fees and new shipping to record additional expenses and the system will compute the total. You are responsible for adjusting the encumbered and expended amount for the one or two funds assigned to the order.

ACQUISITION NUMBER: 870018
{totals computed today}
Encumbered: 60.00
Purchases: 401.50
Sales Tax: 26.10

SEARCHER: RCP

PREVIOUS VALUES
Replace the following with the
above values as appropriate

Purchases: 401.50
Sales Tax: 26.10
Shipping: 10.00
New shipping: 5.00
Fees: 5.00
New fees: 3.50

TOTAL PAID: 451.10

Invoice #: 233764; 245672

Option D - Change Acquisition Data - 3

Example of adjusted funds.

ACQUISITION NUMBER: 870018
(totals computed today)
Encumbered: 60.00
Purchases: 401.50
Sales Tax: 26.10

PREVIOUS VALUES
Replace the following with the
above values as appropriate

Purchases: 401.50
Sales Tax: 26.10
Shipping: 10.00
New shipping: 5.00
Fees: 5.00
New fees: 3.50

TOTAL PAID: 451.10

Invoice #: 233764; 245672

FUND	DESCRIPTION
711	711 Scott - Unbudgeted
998	Transfer internal to organization
999	Gift

Key <Enter> to continue

CURRENT FUND ASSIGNMENTS

Fund 1: 460
Encumbered: 0.00
Expended: 451.10

Fund 2: 711
Encumbered: 60.00
Expended: 0.00

Any changes? Y

Option E - Add New Book

From time-to-time a new order is created and a book is unintentionally omitted during the add process. This option permits the addition of a book title to an existing acquisition if there are fewer than nine (9) titles associated with the acquisition. The user is provided with a blank book form to complete and then is required to update the financial data associated with the acquisition.

Option F - Delete Book

Books may be deleted from an acquisition one-by-one. If all books are deleted, the system will automatically delete financial data associated with the acquisition.

MAIN MENU OPTION 3

REPORTS AND FORMS

BAS is programmed to print purchase order forms, 3 x 5 temporary slips for the card catalog, and various lists for management and the clientele. Select option 3 from the MAIN MENU to do printed reports.

The printed reports menu lists eleven choices.

BOOK ACQUISITION SYSTEM	
Printed Reports and Forms	
Enter choice:	
A =	Vendor/Donor Code List
B =	Vendor/Donor Proof Report
C = *	Donors by Fiscal Year
D = *	Book Arrivals List
E =	Book List by Code
F = *	Purchase Order Forms
G = *	3x5 Card Catalog Forms
H =	Fund Code List
I =	Problem Number Checklist
J =	Accounting Error Report
K =	Fund Accounting Report
Key <Enter> to return to Main Menu	

? ? ? ? ?
Forms loaded?
Form feed set?
Printer on?
Status ready?

* requires:
Epson -or-
IBM Proprinter
(see manual)

REPORT A - VENDOR/DONOR CODE LIST

Option A prints a complete list of vendor/donor codes with associated names.

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VENDOR/DONOR CODE LIST (Report A)

Vendor/Donor Code	Name
AAMUS	American Association of Museums
AANDC	Acquisitions and Cataloguing
ABBE	Abbeville Press
ABBOT	The Lake District Art Gallery
ABERT	Abertay Historical Society
ABERUP	Aberdeen University Press
ABNERS	Frances Schram Abner Schram Ltd
ABRAMS	Harry N. Abrams, Inc.
ACAD	Academy Chicago Publishers
ACANTH	Acanthus Books
AIARCH	American Institute of Architects
AKNOPF	Alfred E. Knopf, Inc.
ALENJA	J.A. Allen & Company
ALGON	Algonquin Books of Chapel Hill
ALKNOX	Albright Knox Art Gallery
ALLPHO	All Photography Books
ALMAG	Almagre Books
ALMASS	AIM Associates
AMERPR	American Press
AMONC	Amon Carter Museum of Western Art
ANCITY	Ancient City Press
ANFOR	An Foras Forbartha Teoranta
ANTCOL	Antique Collectors' Club
ANTIQP	Antiquary Press
APOLLO	Apollo Book
APPTRE	Appletree Press Ltd
ARBOR	Arbor House Publishing Company
ARCHPR	Architectural Press Ltd
ARLIS	ARLIS/NA
ARSLIB	ars libri
ARTARC	Arts & Architecture Press
ARTHE	Arthens
ARTRA	Artra Publishing, Inc.
ASSPUB	Assoc. de Publications U. Strasborg
ASSUNI	Associated University Presses
ATHEN	Atheneum
AYER	The Ayer Company, Inc.
BAKER	The Baker Company
BALSAM	Balsam Press, Inc.
BAMBER	Alan S. Bamberger
BARBIC	Barbican Art Gallery
BATS	Batsford Ltd.
BAUH	William L. Bauhan, Inc. Publishers
BEAR	Bear Creek Publishing Company
BECKCR	C. Richard Becker, Bookseller
BERNET	F.A. Bennett Inc.
BIBLIO	Bibliographic Distribution Center

REPORT B - VENDOR/DONOR NAME AND ADDRESS PROOF LIST

Option B produces a complete report of name and address data for vendors and donors for proofing purposes. The system will prompt for a range to print.

VENDOR/DONOR LIST

Key <Enter> to exit

Starting code: ALMASS

Ending code: AMERPR

Report B prints three vendor/donor records per page.

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VENDOR/DONOR PROOF REPORT (Report B)

ALMASS ALM Associates
Address 1: 3264 Cove Road
Address 2:
Address 3:
City: Jupiter
State: FL
Zip: 33469
Country: USA
Phone:
Discount: 0
Account:
Note:

AMERPR American Press
Address 1: P.O. Box 9747
Address 2:
Address 3:
City: Washington
State: DC
Zip: 20016
Country: USA
Phone:
Discount: 0
Account:
Note:

REPORT C - DONATIONS

Selection of Report C will cause the system to prompt for a brief list or a full report of donor data for a fiscal year.

BOOK ACQUISITION SYSTEM	
Printed Reports and Forms	
Enter choice:	C
A =	Vendor/Donor Code List
B =	Vendor/Donor Proof Report
C =	* Donors by Fiscal Year

1 = Brief List
2 = Full Report
Choice? 1
Print?

??????

Forms loaded?

Form feed set?

Donor Brief List

The brief list provides donor names arranged alphabetically by donor codes.

Brief Donor Report for Fiscal Year: 88 (Report C (brief))

Martin Cohenson
Mr. and Mrs. Bernard Kotchinson
Mr. and Mrs. Roger Martin
Mr. and Mrs. Clark Newton

Donations Received Complete Report

The full report lists donor name and address and the various acquisitions provided.

Donor Report for Fiscal Year: 88 (Report C)

DDDCOH Martin Cohenson
Address 1:
Address 2:
Address 3:
City:
State:
Zip:
Country: USA
Phone:
Note:

880035
BOWDOIN COLLEGE. MUSEUM OF ART
Occasional Papers I: The Walker Art Building murals

880037
COHEN, MICHAEL
Engaging English Art

880043
RIX, BRENDA D
Our old friend Rolly: watercolours, prints, and book illustration

880045
REICH, SHELDON
Keith Crown Watercolors

LAMBOURNE, LIONEL
Ernest Griset: fantasies of a Victorian illustrator

REPORT D - BOOKS RECEIVED LIST

Report D prompts for a start and stop date in order to prepare a list of books received.

The list is arranged alphabetically by main entry.

Page No. 1 Listing for period from 03/30/88
04/30/88 through 04/30/88
BOOK ARRIVALS LIST
(Report D)

Author/Main Entry	Title
Billcliffe, Roger, 1946-	Architectural sketches and flower drawings by Charles Rennie...

REPORT E - BOOK LIST BY CODE

Report E prompts for a fiscal year and status code.

Approved Status Codes:

0 - Out-of-Print	
1 - Backordered	BOOK REPORT BY CODE
2 - Pay later	
3 - Prepay	Key <Enter> to exit
4 - Lost but paid	
5 - Received	Fiscal year: 88
6 - Gift	Process code: 1
7 - Transfer	
8 - Canceled	

The report prints an acquisition number listing of qualifying main entries and titles.

Page No. 1 FY: 88 Code: 1 (Backordered)
04/30/88
BOOK LIST BY SELECTED STATUS CODE
(Report E)

Number	Title	Author
880001	Study of architectural design	Harbeson, John F
880011	Dwellers at the source: southwestern Indian photographs...	Webb, William
880022	Weegee by Weegee: an autobiography	Weegee, 1899-1968
880023	Red Grooms	Ratcliff, Carter
880023	Modern Art at Harvard	Jones, Caroline
880031	A point of view	Steiner, Ralph
880046	Lewis W. Hine	Capa, Cornell
880046	For the world to see: the life of Margaret Bourke-White	Silverman, Jonathan
880051	St. Louis and the arch	Meyerowitz, Joel

FORM F - PURCHASE ORDER FORM

Form F prompts for an acquisition number range before printing qualifying purchase order forms.

PURCHASE ORDER FORM PRODUCTION

Key <Enter> to exit

<< Load printer with forms, ensure printer status is ready >>

Starting NUMBER: 880059

Ending NUMBER: 880067

The acquisition number, current date, and one or two fund codes are printed in the upper right corner. Name and address is printed based on a lookup in the vendor authority file for the assigned vendor code. Up to nine items are listed. The quantity, first 50 characters of the main entry, publisher's catalog reference, and price are printed, then the title, and finally the publisher, date and edition. Entries are separated by a blank line. The system prints a total of net prices.

[preprinted return address]

To ars libra
560 Harrison Avenue
Boston, MA 02118

Order Number: ARL-880059
Date: 01/09/88
Funds: 461

Kindly Observe Instructions:

- 1 GIVE ORDER NUMBER ON ALL INVOICES AND PACKAGES.
- 2 REPORT PROMPTLY ON ALL "SOLD" ITEMS, OR SPECIFY REASON FOR DELAY IN SUPPLYING ANY ITEM ORDERED.

QUANT		Please enter our order for the following, subject to conditions on the face and reverse of this order:		
1		WORCESTER, WORCESTER ART MUSEUM The Dial and the Dial Collection Worcester Art Museum, 1959	Cat: No. 63:848	35.00
1		KENNEY, JOHN TARRANT The Hitchcock chair. The story of a Connecticut Yankee... Clarkson N. Potter, 1971	Cat: No. 63:1255	37.50
1		WRIGHT, FRANK LLOYD, 1867-1959 Sixty years of living architecture: the work of Frank Lloyd... The Municipal Art Patrons, n.d.	Cat: No. 63:1950	50.00
TOTAL COST				122.50

FORM G - 3 x 5 CATALOG SLIP FORMS

Form G prompts for an acquisition number range (see example on previous page) and prints slip sets for all items within the range. Main entries are wrapped on up to three lines. Titles are wrapped on up to two lines. Space is left in the left column for adding a call number.

California. University. Los Angeles.
William Andrews Clark Memorial Library.

Annus notabilis. An exhibition of
books and manuscripts...

Funds 460
Source HENING
Searched RCP
Order 04/12/88
P.O.# 880068

Ed.
Pl. Los Angeles
Pubr. [Castle Press]
Date 1981 LCCN

Cat: Rec'd by sdw D.K. dgw
Price 12.50
Note

Medical Society of the State of
Pennsylvania.

Proceedings of the Medical Society of
the State of Pennsylvania.

Funds 460
Source HENING
Searched RCP
Order 04/12/88
P.O.# 880068

Ed.
Pl. Philadelphia, Penn.
Pubr. Medical Soc. of Pennsylvania
Date 1850 LCCN 8-3464

Cat: Rec'd by dhw D.K. dgw
Price 12.50
Note

REPORT H - FUND CODE LIST

Report H provides a list of current fund codes.

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FUND CODE AUTHORITY LIST (Report H)

[Fund descriptions prefaced with an asterisk are invalid and will not be permitted when adding new orders.]

Fund Code	Description
417	*Use fund code 711 --- NOT VALID
460	460-6070 Schweppe Fund
461	461-6070 Scott
479	479 - Green/Schweppe - unbudgeted
711	711 Scott - Unbudgeted
998	Transfer internal to organization
999	Gift

REPORT I - PROBLEM NUMBER CHECKLIST

Report I lists all acquisition records that are marked as incomplete in the system.

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PROBLEM ACQUISITION NUMBER CHECKLIST (Report I)

P.O.	Ordered	Vendor	Invoice #	Fund 1	Fund 2	Status
870148	07/11/86	RIZZOL	22901	461		I
870239	04/30/87	OLANA	289-87	461		I
870304	03/23/87	NORTON	A637270	479		I
870313	05/05/87	LACMA		479		I
870314	05/15/87	CANCON		479		I
870321	02/13/87	LONGWO	501981	479		I
870361	09/29/86	RIZZOL	31285	711		I
870363	09/29/87	HARVUP	452146	711		I
870368	11/12/86	UWASHP	70995	711		I
870380	11/11/86	IPHOTO	6365	711		I
870423	11/12/86	SCROP	M27423	711		I
870434	11/26/86	RIZZOL	45187	711		I
870440	11/05/86	UTEXAP	139115	711		I
870469	02/06/87	ABBE	514122 4521024 4522640	711		I
870472	02/26/87	SDANLE		711		I
870480	03/12/87	AYER	138455	711		I
870482	11/06/86	GKHALL	9042809	711		I
870506	05/05/87	METHUE	386635I R	479		I
870527	04/30/87	GARLAN	505870	461		I
870530	05/14/87	APOLLO	16910	461		I
870553	11/20/87	WITH		479		I
870554	12/18/87	KNOED		711		I
880001	06/19/87	STEELE		461		I
880011	11/05/87	UNMEX	588046	461		I
880022	11/09/87	DACAPO	22270	479		I
880023	11/09/87	ABBE	527928	479		I
880031	11/10/87	HARPRO	3350536	479		I
880046	11/12/87	VIKING	10829	479		I
880051	11/12/87	LITTLE	12041230	711		I
880056	12/07/87	MIBENN		711		I
880057	12/07/87	MIBENN		711		I
880058	12/07/87	HARPRO		711		I
880059	12/09/87	ARSLIB		711		I
880061	12/09/87	FISTAS		711		I
880062	12/09/87	EYRE		711		I
880063	12/09/87	NGAI		711		I
880065	12/18/87	ACAD		711		I
880066	12/18/87	STMART		711		I
880067	04/21/88	GETTY		479		I
880068	04/12/88	HENING		460		I
880069	04/21/88	GETTY		711		I

REPORT J - ACCOUNTING ERROR REPORT

Report J lists financial records in which the amount assigned to two funds does not equal the total of the purchase. It also lists records which are completed but which have funds still encumbered.

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04/30/88 ACCOUNTING ERROR REPORT (Report J)

Survey of database for records in which the total of book payments, sales taxes, shipping, and fees DO NOT match the total assigned to the fund expenditures.
A blank page signifies no problems for this FY.

870220 << discrepancy listing >>

Book Total: 0.00
Sales Tax: 0.00
Shipping: 0.00
Fees: 0.00
Grand Total: 0.00

Total charged against funds: 1.95

870237 << discrepancy listing >>

Book Total: 131.00
Sales Tax: 8.19
Shipping: 4.62
Fees: 0.00
Grand Total: 143.81

Total charged against funds: 144.13

870469 << discrepancy listing >>

Book Total: 169.90
Sales Tax: 10.62
Shipping: 3.44
Fees: 0.00
Grand Total: 183.96

Total charged against funds: 184.63

870515 >> closed but funds are still encumbered <<

Total encumbered funds: 1987.00

REPORT K - FUND ACCOUNTING REPORT

Report K prompts for fiscal year and lists encumbered and expended funds subdivided by fund codes with subtotals and a grand total.

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FUND EXPENDED/ENCUMBERED ACCOUNTING REPORT (Report K)

Number	Expended	Encumbered
** FUND 460		
880068	0.00	25.00
** Subtotal **	0.00	25.00
** FUND 461		
880001	158.61	85.00
880002	15.27	0.00
880003	24.32	0.00
880004	4.47	0.00
880006	94.26	0.00
880007	30.03	0.00
880008	10.90	0.00
880009	14.87	0.00
880010	3.30	0.00
880011	33.19	35.00
880012	30.11	0.00
880013	44.20	0.00
880014	28.12	0.00
880015	35.23	0.00
880016	22.44	0.00
880017	52.81	0.00
880018	275.04	0.00
880019	74.70	0.00
880020	32.87	0.00
880021	18.99	0.00
880029	31.90	0.00
** Subtotal **	1035.63	120.00
** FUND 479		
880022	42.81	14.50
880023	22.46	135.00
880024	34.32	0.00
880025	24.04	0.00
880026	38.10	0.00
880027	49.41	0.00
880028	14.86	0.00
880030	46.12	0.00
880031	91.80	16.00
880032	49.92	0.00
880033	23.13	0.00
880034	29.69	0.00
880035	0.00	0.00
880036	0.00	0.00
880037	0.00	0.00
880038	0.00	0.00

MAIN MENU OPTION 4

ONLINE SEARCHING

BAS supports online author/title from MAIN MENU OPTION 4.

Each search checks up to the first fifteen (15) characters of the main entry, author 2, author 3, and title fields of each book record for matches. Search strings may be entered in upper- or lower-case. All searches take approximately 60 seconds per 1000 books with an IBM PC and fixed disk.

In the search shown below, the user is interested in records where the stem "calif" is present.

AUTHOR/TITLE SEARCH

Find up to first 15 characters: calif

>> SEARCHING <<

The system first displays a "hit list" of truncated main entries and titles. Each is assigned a number. To view a complete record, the user keys "Y."

```
AUTHOR/TITLE SEARCH
HITS = 4

Find up to first 15 characters: calif

1 Baylis, Douglas California houses of Gordon Drake
2 California Pictorialism, 1977 (photograp
3 Andersen, Timot California Design 1910
4 California. Uni Annus notabilis. An exhibition of books

Retrieve #
View record ? -Y
```

To see the complete record for the fourth item on the list, the user keys "4" to Retrieve #. After examining the data, the user may continue to enter item numbers 1 or 2 or 3 to view those complete records. Keying "N" to "View record" will cause the system to prompt for "List again." A "Y" will cause the brief listing to be posted again. A "N" will prompt for "New search." When searching is completed, the user is returned to the MAIN MENU.

```
AUTHOR/TITLE SEARCH
HITS = 4

Find up to first 15 characters: calif

NUMBER: 880068 Book: 1 Status: Pay later SEARCHER: RCP
MAIN ENTRY: California. University. Los Angeles. William Andrews Clark M
AUTHOR 2:
AUTHOR 3:
TITLE: Annus notabilis. An exhibition of books and manuscripts...

EDITION: DATE: 1981
PLACE: Los Angeles
PUBLISHER: [Castle Press] REQUESTOR: sdw
LC CARD # ISBN/Cat# OK by: dgw

QUANTITY: 1 FOREIGN PRICE: NET PRICE: 12.50
NOTE:

Retrieve # 4
View record ? -Y
```

MAIN MENU OPTION 5

SYSTEM UTILITIES_____

BAS supports six utilities accessed with option 5 from the MAIN MENU.

BOOK ACQUISITION SYSTEM
Database Management Utilities

Enter choice:

- 1 = Pack files and Rebuild Indexes
 - 2 = Install Drive, Printer, and Sales Tax
 - 3 = Backup files to Drive A
 - 4 = Restore files from Drive A
 - 5 = Purge data for a Fiscal Year
 - 6 = Restore purged data for a Fiscal Year
- Key <Enter> to return to Main Menu

OPTION 1 - PACK FILES AND REBUILD INDEXES

Option 1 must be used after several deletions are made from the database. This option physically removes deleted records from the database and indexes all files. If there are power interruptions during a session, it would be a good idea to use this option the next time the database is accessed. Sometimes the system loses track of its index updates and records are displayed that are not expected. Use this routine to correct that situation.

When option 1 is selected, the following screen appears. Key an "S" to start the operation. Pressing any other key returns the user to the utilities menu.

NOTICE . . .

These routines delete flagged records from the following files:

FUND
ITEM
PURCHASE
VENDOR

Plan on doing this operation early in the day.
Leave the computer on until complete.

Key "Y" to exit now -or- "S" to start. S

The system will keep you updated on its progress.

This is a nine (9) step procedure.

- 1- Packing the FUND files . . . <short duration>
- 2- Indexing the FUND files . . . <short duration>
- .
- .
- .
- 9- Indexing the STATES files . . . <SHORT duration>

The process is not complete until the screen clears and the utility menu is displayed.

OPTION 2 - INSTALL DRIVE, PRINTER AND SALES TAX

Refer to the "Getting Started" section of this manual for a review of these utilities, pages 57 to 60.

OPTION 3 - BACKUP FILES TO DRIVE A

Option 3 backs data up to two floppy disks (MONEY and BOOKS). The system keeps track of which of the three disk sets was used last and prompts for the appropriate set. BACKUP AFTER EACH DATA ENTRY SESSION!

Note: Plan to use DOS backup facilities when the number of books online exceeds 1500 and you backup to a 360K drive, a 1.2MB floppy drive can be used until approximately 6000 books are online.

BACKUP TO FLOPPY DISK

Use disk set number >> 1 << for this backup

Are you ready to continue? (y or n) Y

--> Place floppy disk labeled >> MONEY << in drive A and close latch.

--->> Push <Enter> key when you are ready.

Ok? Y

OPTION 4 - RESTORE FILES FROM DRIVE A

In case of a fixed disk crash, restore the system by following the steps in the introduction. When all of the system files are back in the appropriate subdirectory, start **BAS** and enter the utilities menu selecting option 4. Place the latest **MONEY** backup disk in drive A and this utility will load financial data. It will then prompt for the **BOOKS** disk and load all book data. All indexes will automatically be reconstructed. You should be back online within a half hour of the return of the hardware. Note that you must backup after each session in order not to compromise the integrity of your database.

Note: Never use this utility to backup to any files that already have your data stored in them (this will create duplicate records). This procedure is used in conjunction with the system disk supplied with the book. Installing the files provided on that disk and then backing up with this routine restores your database to the point of the last backup. This restore procedure automatically deletes the first three records stored in the **FUND** database file since they are provided in the distribution files and are automatically copied to the backup files (fund codes 100, 998, and 999). The first record in the **VENDOR** database file (**LATER**) is deleted for the same reason.

BACKUP FROM FLOPPY DISK

Are you ready to continue? (y or n) Y

--> Place floppy disk labeled >> **MONEY** << in drive A and close latch.

--->>> Push <Enter> key when you are ready.

Ok? Y

OPTION 5 - PURGE DATA FOR A FISCAL YEAR

Option 5 permits you to store offline all financial and book data for a selected fiscal year. It is expected that within three years after the close of a fiscal year the data will no longer be of value online. This utility stores the data in two text files. The financial data is in PURCfy.TXT (where "fy" are two digits representing the selected fiscal year). The books data is in ITEMfy.TXT (where "fy" is the two digit fiscal year selected). These files may be copied from the BAS subdirectory to floppy disks for storage. Once on floppies, these two TXT files may be deleted from the subdirectory.

PURGE FINANCIAL AND BOOK DATA FOR A FISCAL YEAR

Are you ready to continue? (y or n) Y

Fiscal year: 87

OPTION 6 - RESTORE DATA FOR A FISCAL YEAR

If a decision is made later to restore previously purged data, option 6 will append the old data and construct new indexes.

RESTORE FINANCIAL AND BOOK DATA FOR A FISCAL YEAR

Are you ready to continue? (y or n) Y

Fiscal year: 87

SUGGESTIONS FOR INVESTIGATION

1 - BAS FAMILIARIZATION

Use the **Book Acquisition System** to do the following tasks.

For each of the nine tasks, create one or more entries in a logbook to comment on (1) the adequacy of the user documentation in getting the assignment done, (2) the ease of doing the assignment using the system, (3) changes in the documentation or system that would make the assignment easier.

The *User Manual* (pages 39 to 109) is sufficient to complete the following exercises but does not document several features of the system. As you complete the tasks, consider the degree to which the *Manual* is user-friendly. Where would you improve the documentation. What might either a supplement to the *Manual* or a complete revision contain. It may be helpful to examine documentation for other software for ideas.

1. Use the *Publisher's Trade List Annual (PTLA)* to identify five to ten vendors from which to purchase books. Add these to **BAS** through the vendor authority subsystem (option 1 on the MAIN MENU).
2. Add two individuals to the authority system as "donors."
3. Use the reports subsystem (option 3 from the MAIN MENU) and run the printed report for "Vendor/Donor Code List." Run the "Vendor/Donor Proof Report" for all of the records added.
4. Create four (4) fund codes against which purchases may be charged, flag one of the codes as invalid. Use the report subsystem and run the report for the "Fund Code List."
5. Create two (2) purchase orders to each of the ten (10) vendors from whom you plan to order books (20 purchase orders, use option 2 from the MAIN MENU). All of the purchases are within fiscal year (FY) 88. The purchase orders should range from number 880001 to 880020. A total of forty (40) titles must be ordered. The number of titles associated with any given purchase order should range from a minimum of one (1) to a maximum of nine (9). Some of the purchases should be prepaid and some pay later. Use the report subsystem to produce "Purchase Order Forms." (Note: Use plain 8 1/2 x 11 form feed paper, if the printer does not support elite type, some lines may exceed the width of the paper.) Use the "3 x 5 Card Catalog Forms" option to print some of the catalog slips (it is OK to print these on 8 1/2 x 11 form feed paper, the printer must support condensed and elite type to maintain proper alignment for a 3 x 5 slip).

6. Create an acquisition for the first of your donors which records a gift of six titles. Create an acquisition for the second of your donors which records a gift of three titles. Create another acquisition for the first donor which records a gift of one title. Use the report subsystem and produce the "Donors by Fiscal Year" printout.

7. Assume that four weeks have passed. Edit the purchase orders to record arrivals or other status changes for the titles ordered.

8. Use the reports subsystem to print the "Book Arrivals List" and the "Book List by Code." Run the "Problem Number Checklist," the "Accounting Error Report," and the "Fund Accounting Report" after changing the status for at least twenty (20) of the titles ordered.

9. Test the online search capabilities for authors and titles.

2 - SYSTEMS REVIEW

1. Use the needs analysis data supplied in this book on pages 1 to 38, the readings listed below, and your logbook to prepare a brief paper which discusses the BAS in comparison with acquisition automation in general and the requirements of the special library for which it was designed in particular. Comment on the strengths and weaknesses of the overall system.

2. One of the stated goals for this system is to "increase efficiency by reducing the redundant typing of data on purchase orders, temporary catalog slips, and various lists." Create a series of tests that validate or refute this goal through manual and automated preparation of purchase orders, catalog slips, and the weekly arrivals list. The tests should be timed so that accurate predictions can be made on the amount of staff time that will be expended annually to produce 600 purchase orders and one-thousand book catalog slips. If the salary of the individual responsible for preparing the data is \$12.00 per hour, what are the costs for manual versus automated processing.

READINGS

Boss, Richard W. *Automating Library Acquisitions: Issues and Outlook*. (White Plains, NY: Knowledge Industry Publications, 1982).

Corbin, John. *Developing Computer-based Library Systems* (Phoenix, AZ: Oryx, 1981)

Desmarais, Norman. "Acquisition Systems: Midwest Automated Technical Services System" (*Library Software Review*. 7,no.2 [March-April 1988]: 116-27).

Library Systems Evaluation Guide (Powell, Ohio: James E. Rush Associates, 1983-).

Matthews, Joseph R. *Choosing an Automated Library System* (Chicago: ALA, 1980)

_____ *A Reader on Choosing an Automated Library System* (Chicago: ALA, 1983)

Reynolds, Dennis. *Library Automation* (New York: Bowker, 1985).

Wang, Chih. "Automating Acquisitions for Departmental Libraries: System Analysis Requirements" (*Journal of Library Administration*. 7,no.1 [Spring 1986]: 61-73).

3 - SYSTEMS DEVELOPMENT

Choose a small special library with which to work. Review all of the work that goes into serials ordering and control.

Provide a needs analysis which could be used as the basis for an automated system.

READINGS

Biggs, Charles L., Evan G. Birks, and William Atkins. *Managing the System Development Project* (Englewood-Cliffs, NJ: Prentice-Hall, 1980).

Martin, James. *An End-User's Guide to Data Base* (Englewood Cliffs, NJ: Prentice-Hall, 1981).

Kent, William. "A Simple Guide to Five Normal Forms in Relational Database Theory" (*Communications of the ACM*. 26,no.2 [February 1983]: 120-25).

King, Judy M. *Evaluating Data Base Management Systems* (New York: Van Nostrand Reinhold, 1981).

4 - MARC COMPATIBILITY

As it is currently implemented, the **Book Acquisition System** is not compatible with USMARC standards. Assume that you are working for a firm that wants to distribute **BAS** software in conjunction with a CDROM version of the Library of Congress MARC records.

Provide an analysis of how you would map MARC fields to the record structures used in **BAS**. List and explain the compromises that must be made in order to accomplish the task. Suggest modifications to the **BAS**, including interface designs, that should be considered.

READINGS

Carter, Ruth C. and Scott Bruntjen. "The Purpose of Data Conversion" on pages 57 to 74 in *Libraries in the Age of Automation* (White Plains, NY: Knowledge Industry Publications, 1986).

Crawford, Walt. *MARC for Library Use: Understanding the USMARC Formats* (White Plains, NY: Knowledge Industry Publications, 1986).

USMARC Specifications for Record Structure, Character Sets, Tapes. (Washington, DC: Library of Congress Cataloging Distribution Service, 1987).

5 - BAS DATA MANIPULATION

1. The remaining exercises require the use of dBASE III+/IV or a dBASE clone such as dbXL.

2. Use the dBASE DIRectory command to list the database files, note the difference in the dBASE DIRectory command compared to the DOS DIRectory command:

. DIR

Database Files	# Records	Last Update	Size
FUND.DBF	10	04/12/88	512
ITEM.DBF	35	04/12/88	16384
MANAGE.DBF	3	04/12/88	129
PURCHASE.DBF	30	04/12/88	4608
STATES.DBF	62	04/12/88	1958
VENDOR.DBF	373	04/12/88	110405

133996 bytes in 6 files.

1053184 bytes remaining on drive.

3. Instruct dBASE to provide a DIRectory listing of index files:

. DIR *.NDX

FI_FUND.NDX	II_NUMB.NDX	PI_NUMB.NDX
SI_CODE.NDX	VI_VEND.NDX	

13824 bytes in 5 files.

1053184 bytes remaining on drive.

4. Bring the FUND database file into the work area with its associated index:

```
. USE FUND INDEX FI_FUND.NDX
```

5. List the contents of the FUND database file:

```
. LIST
```

Record#	FA_FUND	FA_DESC
3	417	*Use fund code 711 --- NOT VALID
1	460	460-6070 Schweppe Fund
2	461	461-6070 Scott
6	479	479 - Green/Schweppe - unbudgeted
5	711	711 Scott - Unbudgeted
7	998	Transfer internal to organization
4	999	Gift

6. Use the facilities of dBASE to prepare a report from the ITEM database file. The report should provide an alphabetical listing by title of all books in the file. The report should include title and main entry in columnar format:

TITLE

MAIN ENTRY

40 characters wide.

30 characters wide.

6 - PROGRAMMING

Webster's Ninth New Collegiate Dictionary defines a program as "a sequence of coded instructions that can be inserted into a mechanism (as a computer)." dBASE provides an editor that allows you to create files containing programs that control activities related to the storage to and retrieval from the database files contained within an application such as the **Book Acquisition System**.

Assume that a set of mailing labels is needed for all of the vendors stored in the vendor authority file. Shown below is the file structure for the **VENDOR.DBF** in the **BAS**.

Structure for database: vendor.dbf

Size of each record: 294

Field	Field Name	Type	Width	Dec
1	VA_VEND	Character	6	
2	VA_NAME	Character	35	
3	VA_ADD1	Character	35	
4	VA_ADD2	Character	35	
5	VA_ADD3	Character	35	
6	VA_CITY	Character	25	
7	VA_PROV	Character	2	
8	VA_ZIPC	Character	15	
9	VA_COUN	Character	15	
10	VA_PHON	Character	15	
11	VA_DISC	Character	30	
12	VA_ACCT	Character	15	
13	VA_NOTE	Character	30	
** Total **			294	

The labels are to be printed in zipcode sequence. However, there is no index for zipcodes associated with the zipcode field in the vendor authority file. When prompted by the dot, create an index on zipcodes by issuing the commands:

use vendor [Press <Enter> key]

index on va_zipc to vi_zipc [Press <Enter> key]

dBASE will create an index on the **VA_ZIPC** field of the **VENDOR.DBF** and store the index in a file called **VI_ZIPC.NDX**.

Label size: 1 7/16" long by 4" wide, 9 lines

Line 1:	Blank
Line 2:	'Book Order Department'
Line 3:	Vendor name: VA_NAME
Line 4:	Address 1: VA_ADD1
Line 5:	Address 2 (if not blank): VA_ADD2
Line 6:	Address 3 (if not blank): VA_ADD3
Line 7:	City, State, Zip: VA_CITY, VA_PROV, VA_ZIPC
Line 8:	Blank
Line 9:	Blank

To write a program called LABELS in dBASE, issue the following command when being prompted by the dot:

modify command labels

Press the <Enter> key after typing the command. This will establish a program file with the name LABELS and the extension PRG. The dBASE editor will write any program statements that you type into this file. The following dBASE III+ program will meet the requirements:

```
set talk off
use VENDOR index VI_ZIPC
goto top
set print on
do while .not. eof()
  ?
  ? 'Book Order Department'
  ? VA_NAME
  ? VA_ADD1
  if VA_ADD2 <> ' '
    ? VA_ADD2
  endif && VA_ADD2 <> ' '
  if VA_ADD3 <> ' '
    ? VA_ADD3
  endif && VA_ADD3 <> ' '
  ? trim(VA_CITY), ' ', VA_PROV, VA_ZIPC
  ?
  ?
  if VA_ADD2 = ' '
    ?
  endif && VA_ADD2 = ' '
  if VA_ADD3 = ' '
    ?
  endif && VA_ADD3 = ' '
endwhile
```

```

      ?
    endif && VA_ADD3 = ' '
    skip
  enddo && while .not. eof()
  set print off

```

Save the program by pressing the <Ctrl> key and holding it down while pressing the <W> key.

PROGRAM EXPLANATION

The first program line, "set talk off," ensures that the dBASE record number and commentary from dBASE are not printed on labels.

Line 2, "use VENDOR index VI_ZIPC," instructs dBASE to open the VENDOR database file in association with the index file VI_ZIPC.

Line 3, "goto top," sets the record pointer to the first record identified in the index VI_ZIPC.

Line 4, "set print on," opens an output channel to the printer.

Line 5, "do while .not. eof()," instructs dBASE to repeat the program lines that follow this command up through the "enddo && while .not. eof()," until dbase has processed all of the records in the VENDOR database file.

Line 6, "?," instructs dBASE to print a blank line.

Line 7, "? 'Book Order Department'," instructs dBASE to print the words "Book Order Department" on the label.

Line 8, "? VA_NAME," instructs dBASE to print the content of the field VA_NAME on the label.

Line 9, "? VA_ADD1," prints the content of the field VA_ADD1 on the label.

Line 10, "if VA_ADD2 <> ','," tests to see if there is data in VA_ADD2. If there is data in VA_ADD2, the line following the if statement will be executed.

Line 11, "? VA_ADD2," will be executed if there is data stored in the field.

Line 12, "endif && VA_ADD2 <> ' ','" closes the if statement.

Line 13, "if VA_ADD3 <> ' ','" tests to see if there is data in VA_ADD3. If there is data in VA_ADD3, the line following the if statement will be executed.

Line 14, "? VA_ADD3," will be executed if there is data stored in the field.

Line 15, "endif && VA_ADD3 <> ' ','" closes the if statement.

Line 16, "? trim(VA_CITY), ',', VA_PROV, VA_ZIPC," prints the content of the VA_CITY field and trims off extra spaces following the city name if it is less than the field length of 35 characters. The system is instructed to place a comma after the the city, print the state (VA_PROV) followed by the zipcode (VA_ZIPC).

Line 17 and 18 add two more blank lines to the label.

Line 19 through 21 add a blank line if VA_ADD2 did not contain data.

Line 22 through 24 add a blank line if VA_ADD3 did not contain data.

Line 25, "skip," causes dBASE to get the next available record according to the index VI_ZIPC.

Line 26, "enddo && while .not. eof()," causes dBASE to return to the beginning of the do loop and execute the program lines again to print the next label. The process will continue until the end of the VENDOR database file is encountered.

Line 27, "set print off," turns the channel to the printer off.

Double ampersands are used to signify comments included for documentation.

MULTI-FILE PROGRAMMING EXAMPLE

Based on the programming expertise of the user, complex programming for the database files can be created.

The following program is one of the thirty-five used for BAS. It produces

the the brief list and full report for donors (option C from the Reports and Forms Menu). Note that the program creates a temporary database file and uses two permanent database files.

File: NR_C

```

1 clear
2 store 0 to MV_COUNT
3 store ' ' to PM_FISC
4 @ 10,5 say 'DONOR REPORT'
5 @ 11,5 say 'Key <Enter> to exit'
6 @ 14,5 say ' Fiscal year: ' get PM_FISC picture '99'
7 read
8 if PM_FISC = ' '
9 |   return
10 endif && PM_FISC = ' '
11 store PM_FISC + '9999' to PM_NUMB
12 use PURCHASE index PI_NUMB
13 find &PM_FISC
14 if eof()
15 |   close databases
16 |   return
17 endif && eof()
18 @ 17,10 to 21,56
19 set color to W/N*
20 delete file T_DON.DBF
21 delete file TPI_VEN.WDX
22 @ 19,15 say 'Process Donors from Purchase'
23 copy to T_DON field PA_NUMB, PA_VEND while PA_NUMB <= PM_NUMB
for substr(PA_VEND,1,3) = 'DDD'
24 @ 19,15 say 'Process New Donor File      '
25 use T_DON
26 index on PA_VEND to TPI_VEN
27 select A
28 use VENDOR index VI_VEND
29 if MV_ANS2 = "2"
30 |   select B
31 |   use ITEM index II_NUMB
32 |   select C
33 |   use T_DON index TPI_VEN
34 else
35 |   select B
36 |   use T_DON index TPI_VEN

```

```

37 endif && MV_ANS2 = "2"
38 store 'Y' to MV_TEST
39 if iscolor()
40 |   set color to G/N,N/W,W,N
41 else
42 |   set color to W+
43 endif && iscolor()
44 set print on
45 ? chr(27) + "G"
46 if MV_ANS2 = "2"
47 |   do while .not. eof()
48 | |   store PA_VEND to TM_VEND
49 | |   store PA_NUMB to TM_NUMB
50 | |   select A
51 | |   find &TM_VEND
52 | |   store VA_NAME to VM_NAME
53 | |   if MV_TEST = 'Y'
54 | | |   ? '          Donor Report for Fiscal Year: '
+ PM_FISC + ' (Report C)'
55 | | |   ?
56 | | |   ?
57 | | |   ?
58 | | |   ? '          '+VA_VEND+'          '+VA_NAME
59 | | |   ? '          Address 1: '+ VA_ADD1
60 | | |   ? '          Address 2: '+ VA_ADD2
61 | | |   ? '          Address 3: '+ VA_ADD3
62 | | |   ? '          City: '+ VA_CITY
63 | | |   ? '          State: '+ VA_PROV
64 | | |   ? '          Zip: '+ VA_ZIPC
65 | | |   ? '          Country: '+ VA_COUN
66 | | |   ? '          Phone: '+ VA_PHON
67 | | |   ? '          Note: '+ VA_NOTE
68 | | |   ?
69 | | |   ?
70 | | |   ?
71 | | |   ?
72 | |   store 'N' to MV_TEST
73 |   endif && MV_TEST = 'Y'
74 |   select B
75 |   find &TM_NUMB
76 |   ? space(8) + IA_NUMB
77 |   store MV_COUNT + 1 to MV_COUNT
78 |   do while .not. eof() .and. IA_NUMB <= TM_NUMB
79 | |   ? space(10) + upper(substr(IA_MAIN,1,60))

```

```

80 | | | ? space(10) + IA_TITL
81 | | | ?
82 | | | skip
83 | | | store MV_COUNT + 3 to MV_COUNT
84 | | enddo && while .not. eof() .and. IA_NUMB <=
TM_NUMB
85 | | select C
86 | | skip
87 | | if PA_VEND > TM_VEND
88 | | | store 0 to MV_COUNT
89 | | | store 'Y' to MV_TEST
90 | | | eject
91 | | endif && PA_VEND > TM_VEND
92 | | if MV_COUNT >= 32
93 | | | store 0 to MV_COUNT
94 | | | eject
95 | | | ? space(8) + 'Listing continued for ' +
VM_NAME
96 | | | ?
97 | | | ?
98 | | | ?
99 | | endif && MV_COUNT >= 32
100 | enddo && while .not. eof()
101 endif && MV_ANS2 = "2"
102 if MV_ANS2 = "1"
103 | ? space(8) + 'Brief Donor Report for Fiscal Year: ' +
PM_FISC + ' (Report C (brief))'
104 | ?
105 | ?
106 | ?
107 | do while .not. eof()
108 | | store PA_VEND to TM_VEND
109 | | store PA_NUMB to TM_NUMB
110 | | select A
111 | | find &TM_VEND
112 | | store VA_NAME to VM_NAME
113 | | if MV_TEST = 'Y'
114 | | | ? space(12) + VA_NAME
115 | | | ?
116 | | | store 'N' to MV_TEST
117 | | | store MV_COUNT + 2 to MV_COUNT
118 | | endif && MV_TEST = 'Y'
119 | | select B
120 | | skip

```

```

121 | | if PA_VEND > TM_VEND
122 | | | store 'Y' to MV_TEST
123 | | endif && PA_VEND > TM_VEND
124 | | if MV_COUNT >= 26
125 | | | store 0 to MV_COUNT
126 | | | eject
127 | | | ? space(8) + 'Donor Brief List Continued'
128 | | | ?
129 | | | ?
130 | | | ?
131 | | endif && MV_COUNT >= 26
132 | enddo && while .not. eof()
133 endif && MV_ANS2 = "Y"
134 close databases
135 eject
136 ? chr(27) + "H"
137 set print off
138 delete file T_DOW.DBF
139 delete file TPI_VEN.WDX
140 clear

```

READINGS

dBASE PROGRAMMING

Carrabis, Joseph-David. *dBASE III Plus Networking and Multi-User Systems* (Portland, Oregon: Management Information Source, 1987).

Dinerstein, Nelson T. *dBASE III Plus for the Programmer* (Glenview, Illinois: Scott, Foresman and Co., 1987).

Liskin, Miriam. *Advanced dBASE III Plus Programming and Techniques* (Berkeley, California: Osborne McGraw-Hill, 1987).

Prague, Cary N. and James E. Hammitt. *Programming with dBASE III Plus* (Blue Ridge Summit, Pennsylvania: Tab Books, 1986).

Simpson, Alan. *dBASE III Plus Programmer's Reference Guide* (San Francisco: Sybex, 1987).

_____ *Understanding dBASE III Plus* (Berkeley, California: Sybex, 1986).

dBASE PROGRAMMING FOR LIBRARY APPLICATIONS

Beiser, Karl. *The Essential Guide to dBASE III+ in Libraries* (Westport, Connecticut: Meckler, 1986).

Palmer, Roger C. *dBASE II and dBASE III: An Introduction for Information Services*, 2d ed. (Studio City California: Pacific Information, 1984).

BOOK ACQUISITION SYSTEM - SOURCE CODE

The computer programs written in dBASE that are the basis of the **Book Acquisition System** are available in hardcopy with an accompanying magnetic disk of the source code.

The programs will be of interest to those who already program library applications in dBASE or those who may wish to examine the **BAS** programs as a basis for learning more about library applications programming in dBASE for local applications.

The source code package contains:

- o A program file list with page references.
- o A program reference tree in chart form.
- o Listings of 35 programs enhanced for readability.
- o Cross reference table of program relationships.
- o Symbol table, index to variables used in programs.
- o Floppy disk (5.25") with 35 **BAS** programs.

The price of this package has been set at \$70.00, the cost that many firms charge for one-hour of consulting.

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